Pixel Artist's Beginner Booklet

Chpt. 1

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This booklet consists of lessons and tutorials for the beginner pixel artist. It aims at introducing individuals to the world of pixels in a way that is fun and informative. If you have ever stopped to look at a video game's 2d (two dimensional) graphics and wondered how they were made, or what makes them so appealing, this booklet should catch your fancy. If you have had any interest in creating similar graphics, either for fun, or as a professional job, then you will want this source of free vital pixel introductory material. Join us in this journey as we unlock the mysterious magic within the art of pixel-art.

A place to begin is with a little history, and as is commonly known, computer generated images were introduced back in the 1940s, but it wasn't until 1954 when the first pixels emerged. This new form of pointillism relied on glowing points of light to create graphics, in this case, text, and since then the pixel has been improving by gaining more colors and dpi (dots per inch), allowing for more advanced images. What you see today is an evolved form of past technology. In the past there were restrictions or limits. With new systems being developed which would harness the pixel more efficiently; it had a direct impact on determining the exact nature of the pixel. Today, practically every single visual device you use displays pixels, and with new devices and gaming systems being made such as mobile phones and handheld devices, the demand for quality pixel artists which understand the necessity of managing space intelligently is expected. Of course, it wasn’t always like this, and to help shed some light on how pixels came to be, we’ll spend a brief moment discussing how pixel art was first harnessed through video games.

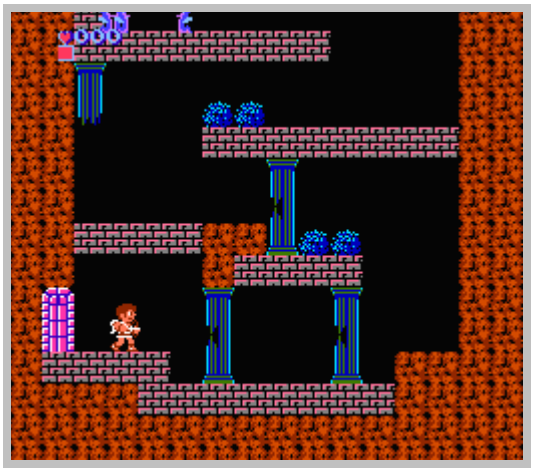
Video games are a great source for recognizing the evolution of pixel art. When we look at games today, we sometimes take for granted how they came to be as they are now. A lot is

Space Invaders, 1978 Midway.

happening on those screens which many overlook, for the most part because it is easy to disregard details as you get lost in the situation which the game presents. When you stop looking at the overall presentation and take a moment to discover the pieces which construct it all, you gain a new understanding of the aspects involved; the focus here being the graphics. The graphical capabilities of video games have been improving ever since the very first video game was made, so to help understand and appreciate the way of the pixel, we will choose a random selection of games from which the progression of the pixel will be made clear quickly and easily.

Our first example is Space Invaders, originally created in 1978 by Midway. The graphics were primitive, yet common place at that time, consisting of only black or white pixels to make out the objects on the screen. With having only two tones, black and white, it is the most simplistic combination for presenting an image, and would be impossible with anything less. With such limitations, the exact placement of each pixel had a direct effect on how the graphics would appear. For pixel artists of that time, constructing their images were similar to a puzzle, and the end results were very vague and

suggestive from a viewers perspective, for example, one small pixel could represent a hand or an arm and so if it were important for a player to see an object as something specific such as an enemy, the artists creating the graphics would need to position the pixels in whichever way would make clear to the viewer that it is this. In extreme cases, a single pixel would represent an object, and it would be up to the player to use their imagination to visualize what it was.



Kid Icarus, 1986 Nintendo.

As the hardware progressed, the graphics within games became more colorful, as can be seen in the 1986 Kid Icarus game developed by Nintendo. This game was played on the Nintendo Entertainment System (NES), which could display a maximum of 25 colors on-screen at any one time (25 from a total 52). These colors were partitioned according to their use. One would be used as the background color. The next 12 would be split into 4 sets of 3 colors and be utilized by any tiles (each tile uses any 1 set, allowing 3 colors per tile), and 12 more would be utilized in the same way for sprites. There were other restrictions as well which the intermediate booklet will touch upon, but for now lets keep things simple. It should be noted though, that with all such restrictions, the demoscene was born which focused on pushing the limits of the available hardware to produce effects which one wouldn't expect at the time, and people of similar interests teamed up to outperform other groups, resulting in regular competitions. Next we take a look at the 1991 release of The Legend of Zelda: A Link to the Past, which was played on the Super Nintendo Entertainment System (SNES). This system supported a 15-bit color depth for a total of 32,768 possible colors to choose from, allowing a maximum 256 on-screen at any one time. Palettes were split into sets of 16 colors allowing each tile and sprite to utilize one.

The Legend of Zelda: A Link to the Past, 1991.

A sprite's dimensions ranged from 8x8 to 64x64 pixels. All of a sudden games were becoming a lot more colorful and as you can see, the visual quality possible in games was expanding, allowing for more intricate graphics. It was becoming more than simply a puzzle for the artist, though even now, the puzzle aspect still exists. Styles begin to emerge as we see more diverse looking graphics, and developers begin the continuous search for the next wow factor, and in my opinion sometimes pushing quality aside in some areas while in the process of reaching it. Now with many new handheld devices and phones being created, which harness various restrictions; there is a continued need for quality pixel-artists & graphic artists and a calling for a return to basics so that the best qualities of the past which made games great then may be combined with those of the future.

I hope this brief introduction has been informative and has helped all of you which are new to this art form gain some insight into the process which has taken place with technology in the past and to the present. In this fast paced world where everything is changing, it is sometimes easy to forget these things. Now it should give you a better impression next time you play a video game or use an electronic device, that those pixels are important for communicating what it is you are seeing, and that there is a history there which can be told and appreciated.

In the next section, we will begin to go over the process of creating a sprite, but to finish this brief history on the development of game graphics let us view some games displaying top-quality artwork to help us get inspired. You too have the potential to create similar work, and by reading these booklets, may learn to do so with my guidance. Try studying the screenshots below to consider what restrictions or graphical structuring may be present within them.

Metroid Fusion

Developer: Intelligent Systems
System: Game Boy Advance
Date: 2002

Final Fantasy Tactics Advance

Developer: Square Enix
System: Game Boy Advance
Date: 2003

Sword of Mana

Developer: Brownie Brown
System: Game Boy Advance
Date: 2003

SVC Chaos: SNK vs. Capcom

Developer: Playmore
System: Neo-Geo, Playstation 2, Xbox
Date: 2003

Looking at these graphics in these games, you can really appreciate the work which the artists put into them. Knowing that practically every pixel was meticulously placed along with reasons for doing so shows that there is a lot which can be learnt from these images as well as others. With the right amount of experience you too can create similar works of art if you set your mind to it; and in these booklets which I present to you, I will help guide you to reaching these goals.

In the next chapter, we'll get introduced to the common tools with which pixel artists use to create their pixel-art. In order to begin creating art, you must first understand your tools and so we will start there and work our way towards creating our first graphic.

The Last Blade 2

Developer: SNK
System: Dreamcast
Date: 1999

Harry Potter and the Chamber of Secrets

Developer: Eurocom Entertainment Software
System: Game Boy Advance
Date: 2002

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