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Welcome to the Design Sketchbook blog! If you are new here and you wanna get ready to start Design Sketching, feel free to receive the Designer Starter Kit and make your first steps!Click here to download the book! It's free :) It’s late at night, it’s quiet and I suddenly saw a small booklet I handmade with watercolour paper and a golden pliers I bought at Tokyu Hands shop. I grab the closest ballpoint pen I see and sketch. Sketching is like practicing sport. Start with a warm up! My first lines are a bit rigid. So I relax my wrist and start sketching with a light pen pressure. Slowly, my lines get more confident meanwhile my hand muscles are warming up. It’s like starting any sport session, with a good warm up. You can feel free to sketch a series of ellipses, circles and straight lines for 5 minutes for example. Can you spot the different line weight? There is an other reason why you should start sketching with a light pen pressure. Whenever you draw with a ball point pen. Start your first construction lines very lightly. So you can slowly bold your lines along the way. This is how you will make your sketch of product much more comprehensive. If like many beginner, you start straight away with bold lines, your sketch will easily get overwhealming. Remember that I don’t want you to erase, but keep iterating on top of your sketch. We are human, not machine. So whenever our lines get approximative, improve it. Drawing is somehow like sculpting. We start with a main shape, that we refine along the way. See also 6 Easy Exercises to Improve Your Line Quality | Draw Confident!This is why in Product design sketching, it’s always great to learn with NO pencil neither eraser. Don’t get me wrong. I am not saying we should bannish it forever. But as a beginner, you will take good habits with a pen. Make sure to choose a pen with good pressure sensitivity. Choose any ball point pen that gives good pressure sensitivity, or a felt pen such as a the Stabilo Stylist for example. Try avoidind Gel pen that are “mono pressure”. Nothing beat the feel of a ballpoint pen drawing on paper =P Iterating is the fastest way to gain your confidence while you draw and not being afraid of making mistakes anymore. Be proud of your mistakes! They help you improve. At school, we learned that making mistakes was “bad” and they deserved to be erased to be replaced. This is why you neeed to twist your mindset. In sketching, it’s recommended to keep the mistakes you do and correct on top of your lines. Why? Because every single sketch you do wil help you get the next one even better! Keep track of them, don’t be ashame of them. Learn from them and you will keep progressing. Hope it helps! Let me know if you have any question in the comments. See you! Cheers, Chou-Tac Have you ever wondered how it is possible to create pictures as the one above? Well, in this Instructable you will learn how to. Drawing with light is a possibility to collect emotions and feelings in only one image. This is only possible in perfect conditions with the accurate materials. One shouldn’t think that it is possible to just start, without any research on this topic, since the knowledge on long time exposure and photography in common is very important to get a high-quality final picture.Light paintings can be compared to normal paintings. The camera would be the paper, and to extend this metaphor, the pens would be the fountain pen, just extremer since the effect of keeping the pen in one place when using a torch in light drawings would be ten times greater than with a normal fountain pen.A tripod – As mentioned in the first step, it is easy to get the final image blurred because of only slight movements of the camera. Therefor a stabilizer for the camera is necessary, a tripod.A camera – The camera has to be able to create a long exposure picture. It should have a bigger lens since this is capable of obtaining more light than a smaller lens. The camera should be able to have a cable release attached to it, since the pushing of the start/stopp button of the camera can cause movement which means that the quality of the picture would decrease. A torch – A bright torch used to create the drawing is needed. It should be possible to switch the torch on and off fast, since the time the torch is on and not needed can cause mistakes in the final picture. A torch able to display different colors is not essentially necessary, but if the final light-drawing should look good, it can be added to the list.1. Be sure not to shine the torch directly in the camera during the long exposure since that would bleed out in the picture and mess up the final image. When shining directly into the camera, something like the picture above will come out and that is not how it should look like.2. The location of where the image is taken is very important, since there should be no light source around, and no moving objects, etc. It is better not to do it in the city since this is the place with a lot of light sources and moving objects.3. What to wear is very important, seriously, since in some pictures one wants to stand out and in others one doesn’t. Therefor the use of black and white t-shirts depending on the scene is important.The set is very important when trying to do things like these. One either has to use a dark room, or wait for it to become night and do the light painting outside, which can look better when you try to use the set in your picture. A big area is necessary since the angle of the camera and the lens is wide.Using the set in the final picture only functions outside. Not too much of the set should be visible though, since otherwise the contrast between the bright torch and the darkness is destroyed, as one can see in the second image.Place your camera on the tripod or on any stable place, about 3-4 meters away from where you want to stand. (The distance can also be longer, depending on the size of the area). Make sure to set the camera mode to 'manual' (M), and adjust the camera's shutter speed to 20-30 seconds depending on how much time one needs.Because of the time one needs to get in place, set a timer or ask another person to press to start.Make sure to have no other lights unless you want it.If you did everything correct, your screen should look something like the one in the picture.Try it out yourself now! To get a bit of inspiration, watch this video. (everything has to work as planned, especially if it is the first time in trying it out. Progress, as shown in these 4 images, is very important. Always look at the previous pictures to see what you can improve and which mistakes you did.After you have the final image you wanted, in a high quality without any improvements to make, then save it and do whatever you want with it. Use it as a poster, as a project or just get it printed. Turbo Computer Light pen A light pen is a pen-shaped input device which connects to a compatible computer (such as the C-64): The device contains a light sensor which, when pointed at a cathode ray tube screen, generates a signal each time the electron beam raster passes by the spot the pen is pointing at. The VIC-II accepts this signal, generates the X and Y coordinates in a pair of registers, and, if desired, causes an interrupt to the CPU every time new coordinates are reported. Companies[edit | edit source] Circuit diagram The following companies produced light pens: REX 9631/9520 Conrad Lindy Cardco, Inc (VIC-20, C64) Futurehouse (Edumate Lightpen) Amicron Ltd. (Microscirbe Lightpen) Madison Computer (McPen Lightpen) Koala Soft Pixsticks Inkwell Systems Turbo Tech Sketch Inc Pen-Datel Stack 100, Stack Computer Services Ltd. Trojan C64/128/16/116, Plus/4 Software[edit | edit source] Paint'n'Sketch This software supports light pens: GEOS has got a driver for the light pen for using the graphic programs GeoPaint and GeoCanvas. CAD-Master (Trojan) for C64/128/16/116 and Plus/4 FlexiDraw 5.0/5.5 (Inkwell Systems) Koala Soft: Koala Painter Paintbox Package (Stack) for these games Crossword Twister, Seek and Destroy, Draughts, Concentration, Simon, Othello, Go-Go, Shuffler, Life, Lost in the Labrynth Penmaster Art Package (Trojan) for C64/128 Picasso's Revenge (1986) from Progressive Peripherals & Software (USA); Box inlusive Lightpen. BASIC programs like Cardriter 1 (Cardco, Inc, 1983) for VIC-20 and C64: Introduction to the Light Pen, Pen Map, Fun With Numbers, Computer Literacy Quiz, Tic-Tac-Toe, Mailing List Easy to build, but rarely supported[edit | edit source] Light pens are easy for the electronics hobbyist to build from a scrapped ballpen, a phototransistor and some electronics (amplification and Schmitt-trigger): Using a female DB9 allows such a setup to connect directly to, and even draw its power from, control port 1 on the 64 (in which the "fire" button line was also connected to the VIC's light pen input). Similarly, light guns were once available in computer stores etc., which used optics to allow the device to be aimed at on-screen targets from some distance. Despite the ease and availability of this technology, it was rarely used, owing mainly to lack of precision. First of all, the X coordinate is "rounded off" to even pixels (or more precisely; the reported X coordinate is an integer representing half of the actual horizontal position). Second, problems with noise, non-ohmic properties of the involved cables etc. causes a lot of "jitter" (several pixels) on the reported X coordinate, even if the pen is held completely still over a specific point on the screen. The light pen also requires the entire screen image to be quite bright, to ensure a significant "spike" in the amount of light received as the beam passes by the pen's tip. Any dark graphics causes the aiming point to "slip off" the dark areas, catching a nearby brighter spot on the screen instead. These limitations make the light pen system unsuitable for "precision work", such as drawing things or pointing to menus on the screen, leaving only "non-precision" shooting games as a target application for this technology. Since light pens work by detecting the scanning of the CRT image they will not work with LCD monitors. Programmer's How-To-section[edit | edit source] The light pen "system" runs as soon as a correctly adjusted light pen is attached to control port 1; no initialization is required. The VIC registers for light pen coordinates are at 53267-53268: 53267 holds the X coordinate divided by two – in order to obtain the actual X coordinate (a 9-bit figure), one has to multiply by 2, or do an ASL on the byte obtained from this register, to get the actual X coordinate. 53268 holds the Y coordinate. Notice that the X and Y coordinates follow the same geometry as the coordinates for sprites; thus the very first pixel at the left edge of the text screen would have an X coordinate of 24 on a PAL machine (read as half the value, i.e. 12, from the VIC address). Bit 3 (weight 8) in the VIC's interrupt register (at 53273/$D019) and interrupt enable register (at 53274/$D01A) is used for interrupts occurring because the light pen caught a screen position. Address Hex Address Dez Function Descritpion $D013 53267 X Coordinate about half resolution of the the C64 display in X direction $D014 53268 Y Coordinate $D019 53273 Interrupt Requests Bit 3: LPIRQ, IRQ vom Lightpen, 1 = active $D01A 53274 Interrupt Request Mask Bit 3: MLPI, 1 = Interrupt in $D019 activated Example:[1] 100 POKE 53280,0: POKE 53281,1 110 L=0: REM WITH L=1 the POINTS WILL NOT DELETED INSTANTLY 120 PRINT CHR$(147) 130 FOR I = 1 TO 5 140 X=X+PEEK(53267) 150 Y=Y+PEEK(53268) 160 NEXT 200 X=INT((X/5-34)/3.8) 210 Y=INT((Y/5-49)/7.8) 300 IF X