

"Create the World" in a page ? Lets start with (Computer Code instructions like) :

- * Calculator-like functions (like add & subtract) .. computers work w numbers ..
- * Loop functions .. (to repeat stuff .. like Maths, over and over very very fast) ..
- * Copy functions ..

e.g. copy numbers representing colours from storage (like USB memory stick) to screen (grid) dots (pixels) .. in a loop .. very very fast .. then use add or subtract to fade those pixels (each dot on each screen re-draw) .. like if 0 represents black and 100 represents white .. a grey-scale between .. + other fade variations you can think up ? Wipe left / right / up / down transitions ? Dissolve/s ? e.g. MS Power-Point presentation transitions ? Hint : Nested x & y screen position loops are possible Even cross-fade between images ?

.. a rough definition of the computer graphics term "sprite" is "a small common / repeat image composed of pixels, such as a Game Player Character or enemy Game Character .. or also the small repeat images that are repeated to compose the Game Level or Board / background" .. again, "pixels" the small / tiny square coloured dots that appear on the screen / grid ..

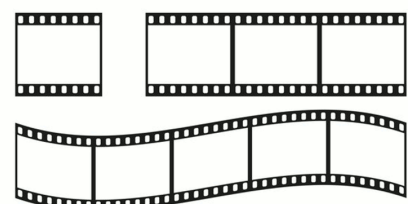
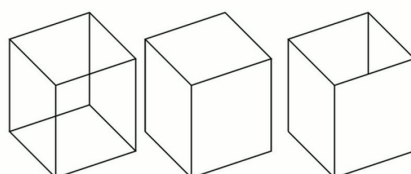
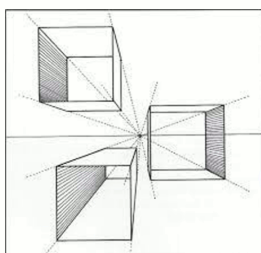
e.g. move Game sprites around (on the screen) .. mapped to keyboard keys (or joy-stick / joy-pad) .. via add / subtract to move the positions of their collective dots / pixels .. different add / subtract sizes to different speeds .. now add a gravity equation to move the Game sprite back down to the ground sprites, from a jump .. and perhaps a Compare function to tell its collided with the ground + to stop there, rather to "ghost" through the ground sprites ? Large copies of data to scroll the Game background around ? Or an animation walk-cycle loop for a Game Player ?

e.g. Sinclair-QL example of the random colour / line/s star form a central point (lets just say "center of screen") ? A line function made itself of the general 7x types of Instruction ? Then the line function as part of a code-library of useful functions ? Could also do a star-field like this .. of animated / tracked random dots moving from the center of the screen outwards .. frame after frame ?

e.g. pixels combined as font / text characters .. like Game sprites ? For text editors and all that ! Then maybe loading / saving that text data to USB stick / storage ? Number-representations of the text characters .. not all the dots / pixels are needed ! (hence slightly / quite data-compressive to that) ! The difference between text and graphics data / file formats .. hence the (different) file extensions !

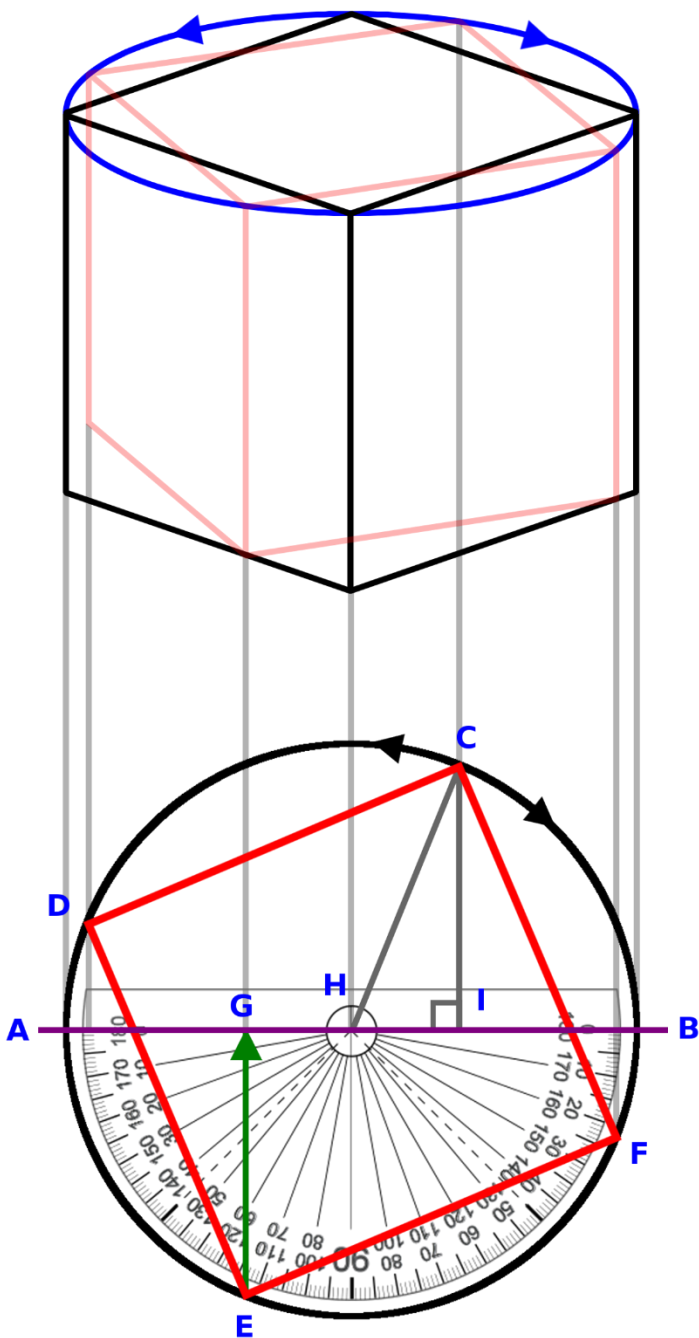
e.g. sound is similar as can be numerically represented as data, to move a speaker and produce or microphone to record sounds ?

e.g. draw a 3D cube on the screen using the lines function described above .. then figure out the mathematical functions to rotate the points / verticies those lines intersect at .. in order to make the cube rotate .. from frame to frame redraw .. or scale cube bigger / smaller ? > CGI Cartoon Movies + photo-realistic Movie Special FX / 3D mesh Modeling ? "Make the cube rotate" .. Hint : Involves sine and cosine / trigonometry functions like taught at High-School for the rotations ..



3D-Game-Engine / 3D-Modeler Studio mathematics ..

(these maths diagrams are more simple than they first appear ..
 + I haven't thought it through well, these may be incorrect) ..



A-B : Line to represent screen surface

C-D-E-F : The 4x vertices of (that comprise) the (example off-kilter) red rotated square (that could represent the top or base square face of the 3D cube)

H-C-I : Right-angle triangle ;
 Pythagorean theorem : $a^2 + b^2 = c^2$

H-C : Right-triangle hypotenuse /
 sweep radius ..

E-G : Projection of vertex onto screen surface