--=|||[[[SEEDS]]]|||=--

It is easy... so, let's start building!
First of all get your desk ready and make sure you have the necessary tools:
- soldering iron
- soldering tin
- cutter (the ones like in the picture are the best but a small nail clipper will do the job too)

Follow the next steps in the order it is written down.
After each step flip the board and clip off the wires.

Diodes 1
D1/D2/D3/D4/D5/D6   BAT43 (Blue with black stripe)
Make sure you solder them in the right direction! There is a black
marker on one side which should correspond with the marker on the
PCB **like on the drawing.**

Resistors
R1/R2/R12	1K (brown – black – black – brown – brown)
R3/R4/R5	3K6 (orange – blue – black – brown – brown)
R11	150R (brown – green – brown – gold)
R6/R8/R9/R10	10K (brown – black – orange – gold)
R7	22K (red – red – orange – gold)
R13/R14/R15	1M (brown – black – black – yellow – brown)

Diodes 2
D7/D8   1N4001 (black with white stripe) <u>Mind direction!</u>

Capacitors
C2/C3/C6	104 (100nF)
C4/C5/C7-C11	103 (10nF)
C1	330nF (blue cap)
C12	100nF yellow poly cap
C13	1uF big red WIMA
C14/C15	820pF small red WIMA
C16/C17	*10uF*

Mind that cap C16 and C17 have two sides (a + and – side) so it is important to check the direction before you solder them! The – side is marked on the PCB with a small "–" and has a square pad.

LED
The clear LED should be soldered sitting flat on the board above the second jacksocket from the left. The LED has a short and a longer leg. The longer leg goes into the square pad and the shorter leg on the side marked with a little"-".

Power regulator 78L05 (Don't mix it up with the transistor!!!!!!!)
This is the black thing with 3 feet which looks like a transistor, there is 78L05 written on it. Mind the direction drawn on the PCB!

Transistor Q1 BC547 (Don't mix it up with the power regulator!!!!!!!)
This is the black thing with 3 feet which looks the same as the 78L05, there is 547 written on it. Mind the direction drawn on the PCB!

Opamp
The ic socket has a mark on one side, make sure this corresponds with the mark on the PCB. On the PCB the IC is marked as TL072. After soldering place the IC corresponding the mark. Pin 1 is marked with a square pad on the PCB.

Tall pushbutton
It should be placed on the square mark with the little cross in the middle. It fit only in one way. Press them fierly to make sure it sit nice flat on the board, you can use your thump nails on both side of the pushbutton and press till it sit flat on the board.

Potentiometer 1
This is the blue small potentiometer. This potentiometer should be placed under the 7 segement display on the left side of the board. Make 100% sure it is soldered straight vertical.

Arduino
In the kit there are two types of headers, the male headers in the package of the arduino and the two female headers. Place the male headers on the female headers and place them together on the arduino with the male headers facing the back of the arduino. Then solder the Arduino including the headers onto the back of the PCB.

Power header
placed on the back

Jack sockets, potentiometers and 7 segment display
As you have soldered already one potentiometer and the tall switch you have two points fixed for the frontpanel. Now place all the other components and before you solder them put the frontpanel in place to line them all out.
Solder them after you placed and lined out the frontpanel!
The 7 segment display should fit tight against the back of the frontpanel. This way you can read the display through the little holes in the frontpanel. Make sure to check the orientation of the display. The dot on the display should correspond with the dot "o" drawn on the PCB.

You are done **Enjoy!**

Programming
I programmed your Arduino already for you but every now and than there might pop up a new firmware. The firmware can be found on www.ginkosynthese.com.
In case you want to udate you need the Arduino IDE installed on your computer and install the CH340 driver to communicate with the Adruino Nano.
The latest Adruino IDE can be downloaded from the Arduino website: https://www.arduino.cc/en/main/software
The CH340 driver can be found here: https://sparks.gogo.co.nz/ch340.html

IMPORT NOTE!

Make sure that the frontpanel fits smooth before soldering!
I like to design the panels as tight as possible to avoid wobbly parts.
But for DIY kits this sometimes is a bit an issue when the kit is not soldered according to the manual or not soldered precise.

In this kit the most critical part is the small switch which perfectly fits through the hole in the panel but as soon as the hole is not exactly above the switch it will be stuck and you will break the switch.

Please take some care in the last part of your solder work and make sure the switch is not stuck in the hole!