PhoneScope

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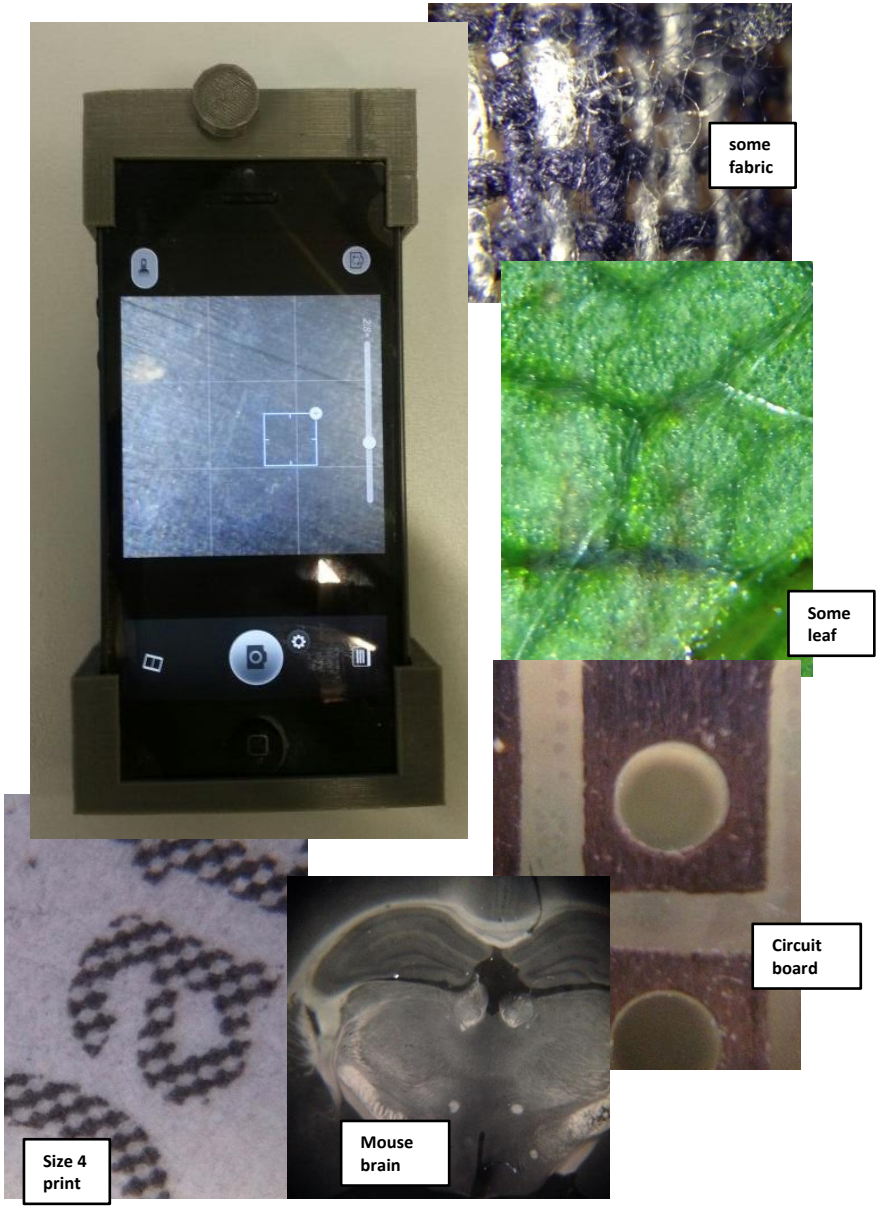
Help us design cheap, good lab equipment!
http://trendinafrica.org/activities/open-source/open-source-main/

We want your brain!

(in a completely non-zombie fashion)

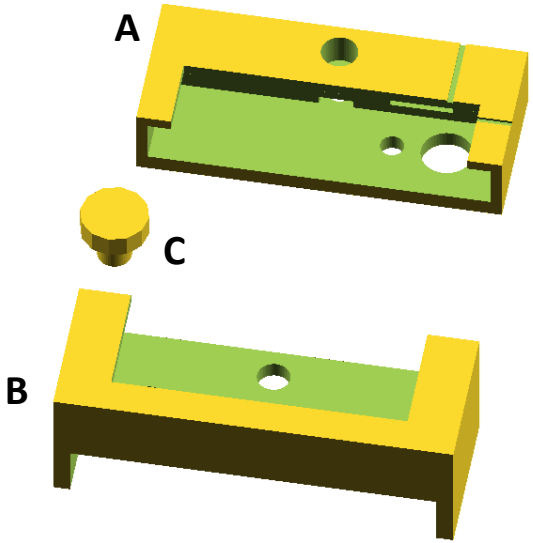


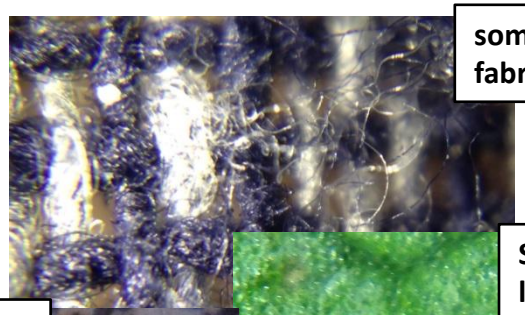
*inspired by countless “stick a lens onto your phone“ Instructables (http://www.instructables.com/)

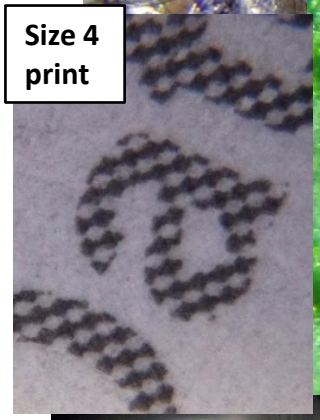
PhoneScope Overview

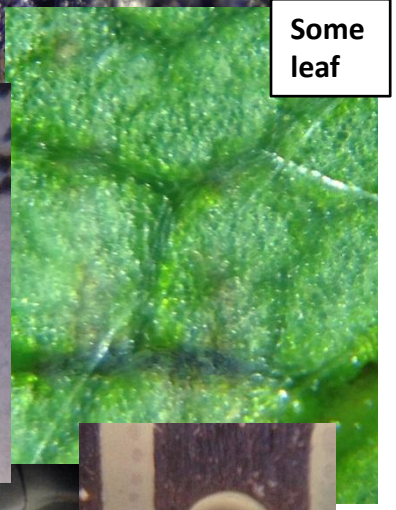
iPhone5 version printed on Felix printer

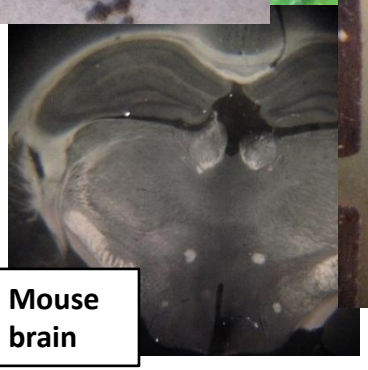
normal quality, no supports: ~1 hr 10 mins

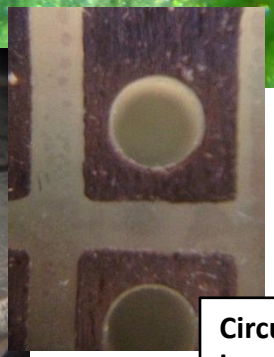




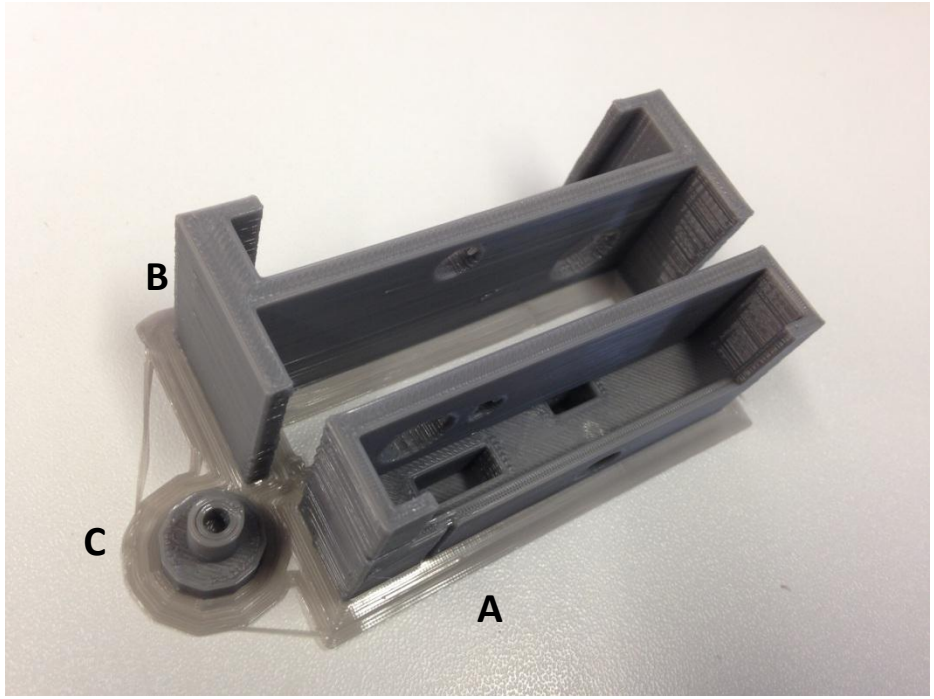








Part list



- **M3 screw * 1 (e.g. 20 mm)**
- **M3 washer * 1**
- **1 lens***

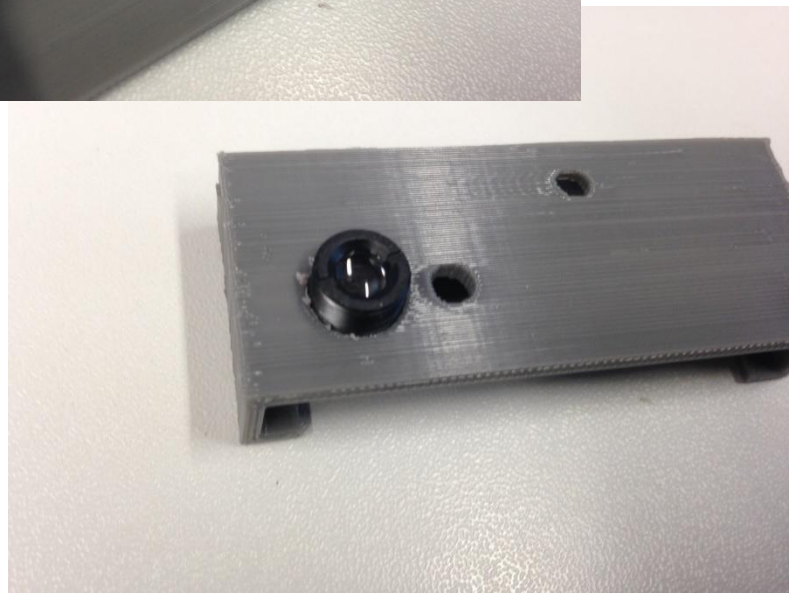
*there are many lenses out there that can be used, e.g. those of a cheap laser pointer (google how to remove it).

I use these acrylic lenses I found on ebay, 10 lenses for 10 US$:
http://www.aixiz.com/store/product_info.php/cPath/46/products_id/374/osCsid/37cabc139b4f03b0e0a522178defae7e)

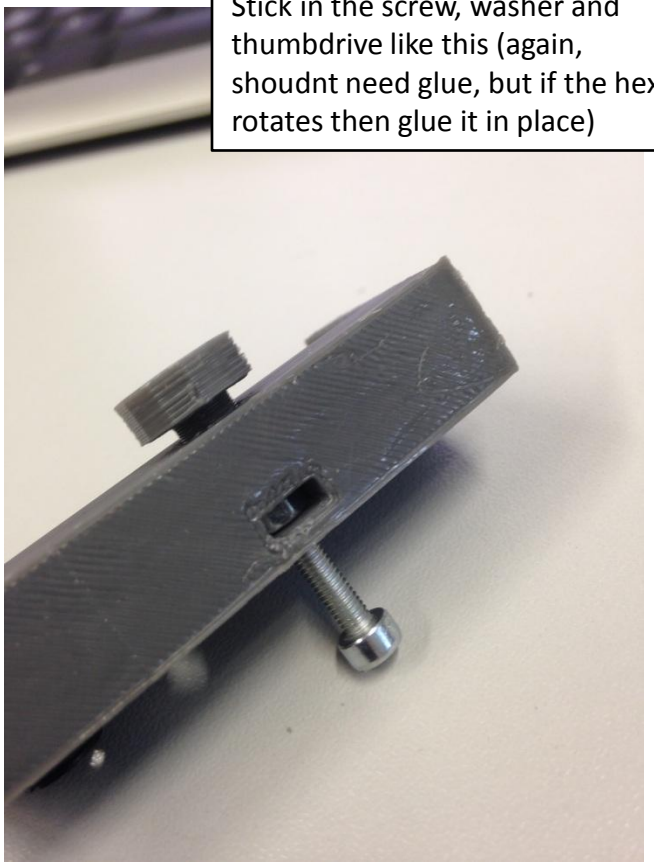
...as also suggested for this scope: (http://www.instructables.com/id/10-Smartphone-to-digital-microscope-conversion/)

Assembly

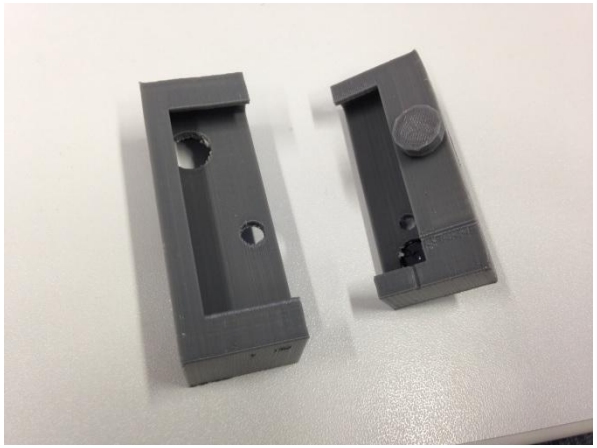
Stick the lens into part A like this. Make sure it is flat (check by looking through phone camera if in doubt). Shoudn‘t need glue, but glueing won‘t hurt it either

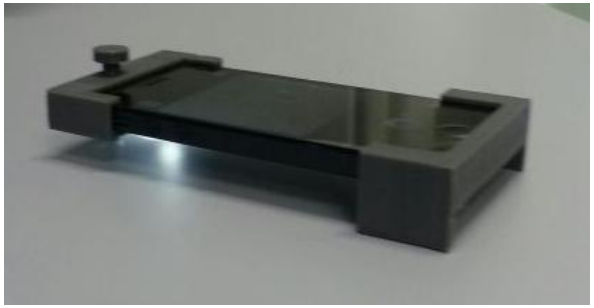


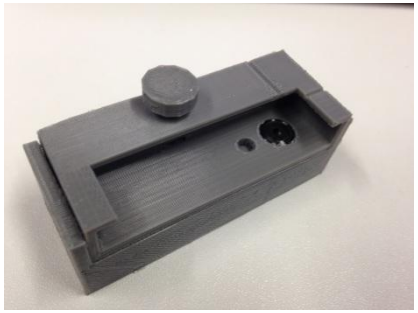
Stick in the screw, washer and thumbdrive like this (again, shoudnt need glue, but if the hex rotates then glue it in place)

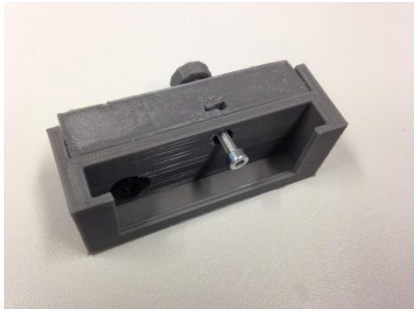


Finished... (note that it should stack nicely when not used)



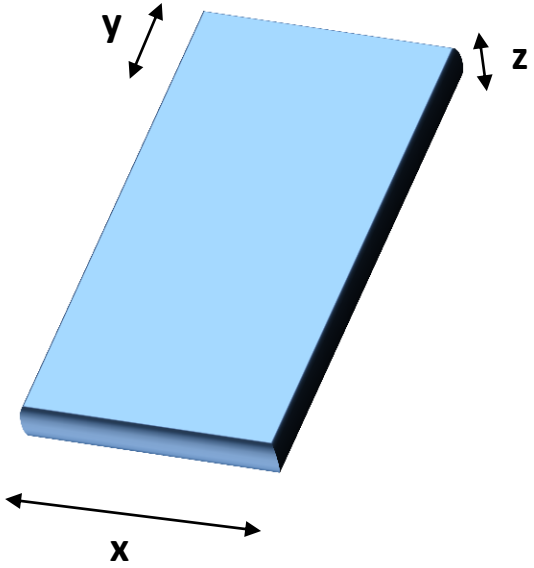


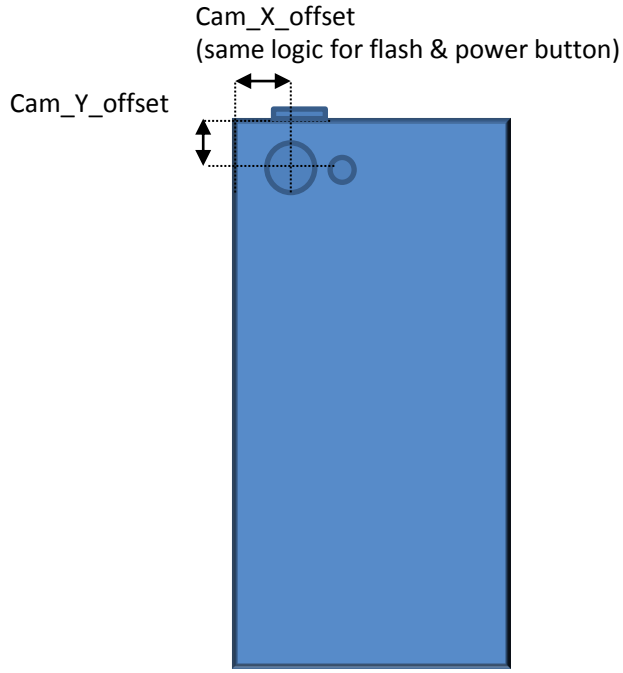




Adjusting PhoneScope for your phone type*

Note: you can measure these manually, or probably easier, get the exact number by googling for them (should be pretty straight forward)





Note: if you have adjusted and tested this for another phone, could you please upload the files or email me so I can do it? It would be nice to have files ready for different phone types... Thanks!
My email: thomas.baden@uni-tuebingen.de

Other parameters:
Tol: tolerance value added to X/Y/Z dimensions
Tol_S: tolerance value for things that should push-fit
Rim: pretty selft explanatory
Wall: ditto
Sep: seperates pieces more, in case they end up overlapping