printing of a human skeleton

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# Printing of a human skeleton

## Equipment for creating a human skeleton

The following equipment is required to 3D print a human skeleton:

* 3D printer (<https://www.prusa3d.com/cs/produkt/stavebnice-3d-tiskarny-original-prusa-i3-mk3s-3/>)
* 3D scanner (<https://www.vyuka-vzdelavani.cz/3d-tisk/matter-and-form-v2-3d-skener.html#2905>)
* Filaments (<https://www.prusa3d.com/cs/produkt/pla-extrafill-metallic-grey-750g/>)
* Processing tools (<https://www.datart.cz/mini-bruska-extol-craft-404111-130-w.html?gclid=CjwKCAiAzrWOBhBjEiwAq85QZ05XJrzB0v64dGQ_l3n9Ei1bxcuZS4R5fMU9cgXOJaptGArwhXa-FRoC0osQAvD_BwE>, <https://www.alza.cz/hobby/krt452002-modelarske-noziky-sada-36ks-d6774988.htm?kampan=adwho_hobby-a-zahrada_pla_all_hobby-a-zahrada-css_rucni-naradi_c_1003737___409276959993_~89341522482~&gclid=CjwKCAiAzrWOBhBjEiwAq85QZ0BmWYBwC4tGAUiFnM430FnaCzNE05PFUfx6V3j695ICxckLdYJilBoChkMQAvD_BwE>, https://profimodel.cz/cs/celistove/250036-modelcraft-mini-kleste-v-pouzdru-sada-5060030667470.html?gclid=CjwKCAiAzrWOBhBjEiwAq85QZ7KT\_pvdWv0GqDiNe1H6SR7OyS9c9P9Sb2ZiRu7scRsFrh8pn\_GSzhoCCs0QAvD\_BwE#250036k#250036kD)
* Magnets (<http://www.neomag.cz/cz/katalog/neodymove-magnety/valce/magnet-nv0065-3x1-5-n42/?from_katalog=1,razeni>, <http://www.neomag.cz/cz/katalog/neodymove-magnety/valce/magnet-nv340-6x3-n38/?from_katalog=2,razeni>,)
* Glue (<https://www.lepidla-online.cz/eshop/p/loctite-406-20-g-vterinove-lepidlo-50/?gclid=CjwKCAiAzrWOBhBjEiwAq85QZ3OMy5ght9I6NnVPTUZKbwQT5bwyax2SrDhh03mD6kkrL6vuU20Z4BoCcq8QAvD_BwE>)

# Workflow

To create a 3D model of the human skeleton in life size, we used freely available models of individual parts of the skeleton from the internet, which we adjusted to the appropriate size of the model in the PrusaSlicer program. We scanedf those parts of the skeleton for which we could not find a freely available model using a 3D scanner (e.g. human ribs). All parts of the frame need to be thoroughly processed or connected (glue, magnets, wires...).

### Human skull

available free model available at: <https://www.thingiverse.com/thing:4830026?fbclid=IwAR1THNG8fDaSkhpWNWe4OqMETV_nY49tXryAA2aL6W4fAW_TF1LfOZcyUss>



The skull consists of 18 parts.

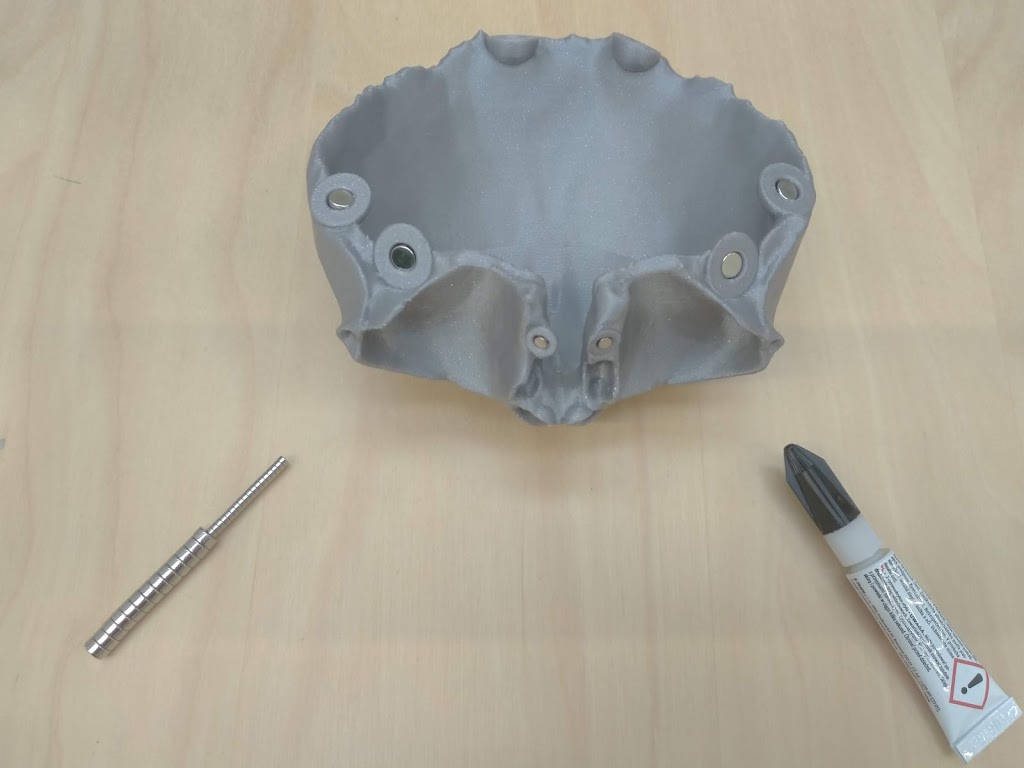


Each part needs to be processed.



It is necessary to stick the magnets correctly in each part.





### spine model

the model, like all others, needs to be scaled to match the other parts. We followed the skeleton model that we already have at school.

And here is the link to the spine model - <https://www.thingiverse.com/thing:4982223>



Model of the female pelvis – once again, it can be disassembled thanks to magnets. The link is here <https://www.thingiverse.com/thing:4946668>



Human pelvis model 2 - <https://www.thingiverse.com/thing:4937177>



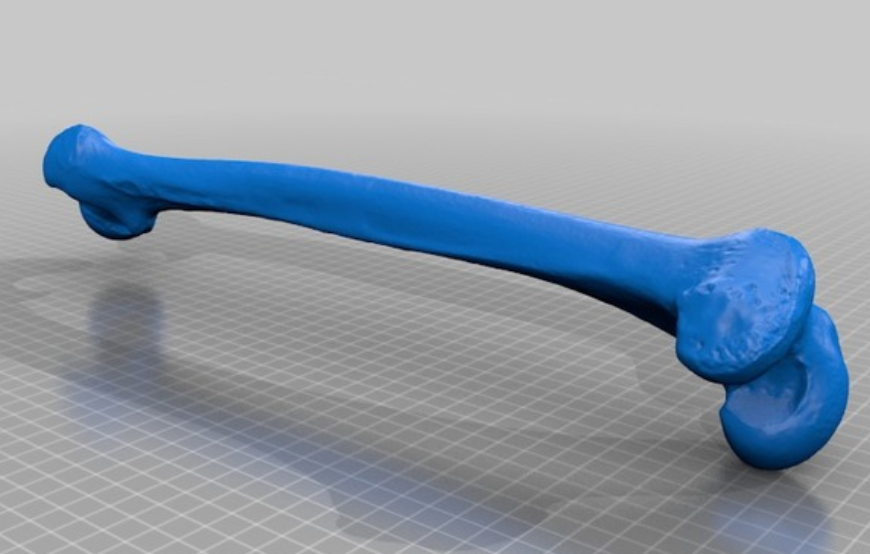
Foot Model– link: <https://www.thingiverse.com/thing:4849504>

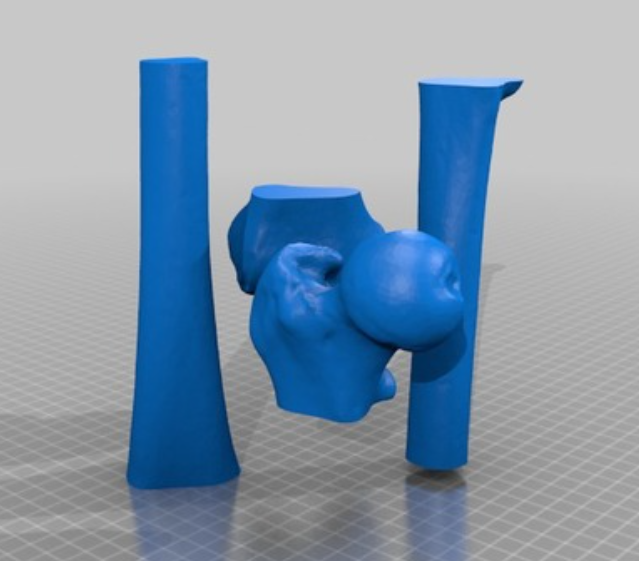


Hand model (palm) – link: <https://www.thingiverse.com/thing:4841107>

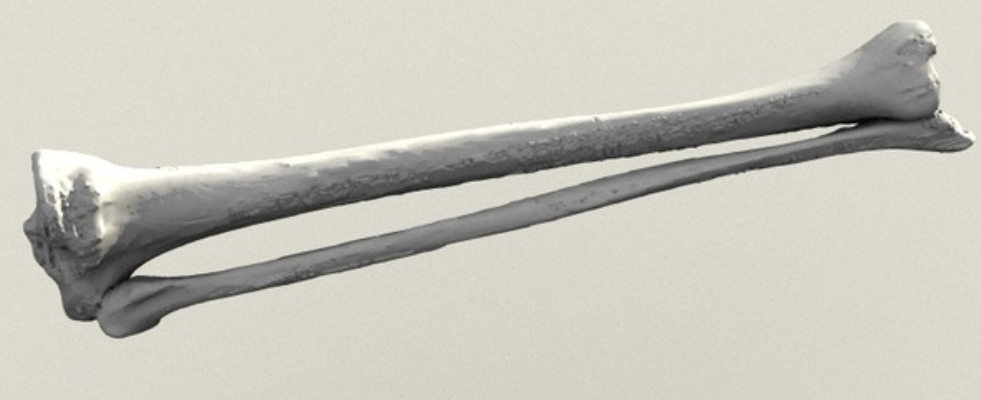


Femur Model- <https://www.thingiverse.com/thing:5820>, <https://www.thingiverse.com/thing:3295652>





Model of tibia and fibula- <https://www.thingiverse.com/thing:1030467>



Upper limb model- <https://www.thingiverse.com/thing:1352085>

