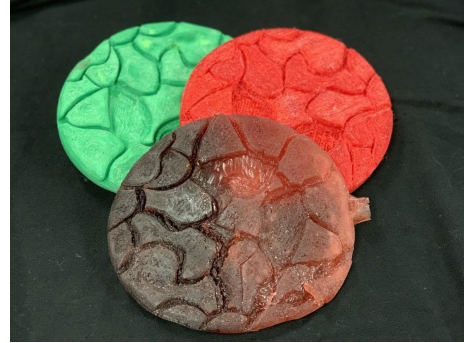


MEDNET

Model Exchange & Development of Nursing &
Engineering Technologies



Placenta

MEDNET File: Placenta.stl

PlacentaWMP.stl

Description

A silicone model training device provided to nursing faculty.

Features

To construct an accurate model of a placenta we first constructed a 3D PLA modeled placenta with the umbilical cord in the correct position. Removable pieces were also included in the model to simulate the event of a portion of the placenta being left behind causing a postpartum hemorrhage. However, there is also a complete model with no missing pieces. The PLA 3D print was used to create a silicone mold. The silicone mold is used for injection molding. We pour silicone into the mold. If the silicone model comes out incorrectly, one can reheat the silicone and rapport the mold. The silicone model allows us to control the coloring in order to achieve the correct color and texture of a placenta.

Development Information

Materials needed: PLA filament and silicone

Finished dimensions: 7"x 8.5"x 0.75"

PLA filament \approx 0.22 of a roll

Silicone mold \approx 1,840g

Soft plastic \approx 14oz

A material of your choice \approx You may use any material you choose to outline where you will pour the silicon to create the desired mold.

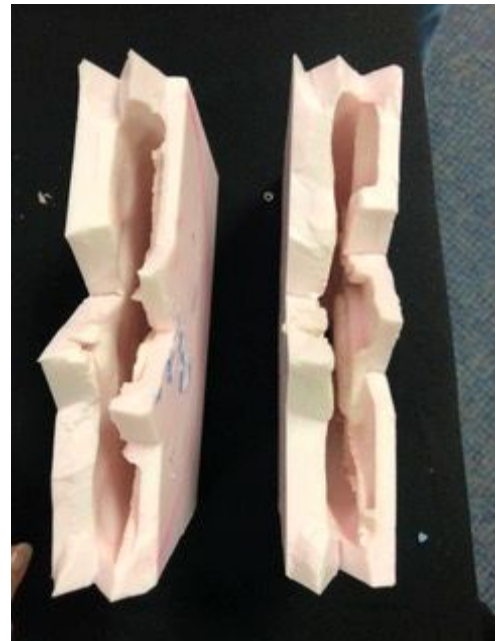
Production time \approx 24 hours

Approximate materials cost: \$53.00

(You may reuse the mold for each placenta after the first one, therefore every placenta after the first one will cost approximately \$21.00.)

Instructions for Use

The placenta model allows for more hands-on instruction/practice for the students. There are removable parts of the placenta, giving a more realistic simulation of this critical medical procedure.



Material Procurement Information

Filament: Hatchbox Filament 1.75mm - \$22.99/roll (prices vary per color)

https://www.amazon.com/HATCHBOX-3D-Filament-Dimensional-Accuracy/dp/B00J0ECR5I/ref=sr_1_4?crid=2GJUX43SIM4TP&dchild=1&keywords=pla+filament+1.75mm&qid=1590077168&s_prefix=pla+filament%2Caps%2C178&sr=8-4

Silicone: OOMOO 30, 1 gallon - \$163.74

<https://shop.smooth-on.com/oomoo-30>

Soft plastic: Alumilite Alumisol 32oz soft plastic - \$34.99

https://www.amazon.com/Alumilite-Alumisol-32-Soft-Plastic/dp/B0071O383Y/ref=sr_1_17?crid=3T99Y05BV74P3&dchild=1&keywords=alumisol+soft+plastic&qid=1592927092&srefix=alumisol+%2Caps%2C167&sr=8-17

*citations: Placenta. MED-NET. Retrieved from uahmednet.org.