Chainmail

Erasmus+ We are the makers!
(by EDUMOTIVA team)

Co-funded by the Erasmus+ Programme of the European Union

In this presentation

1. What is a Chainmail- Applications
2. Different patterns of Chainmail for 3D Printing
3. Connection points – Support in 3D Printing
4. Choose a chain link to create your own chainmail

Chainmail

What??

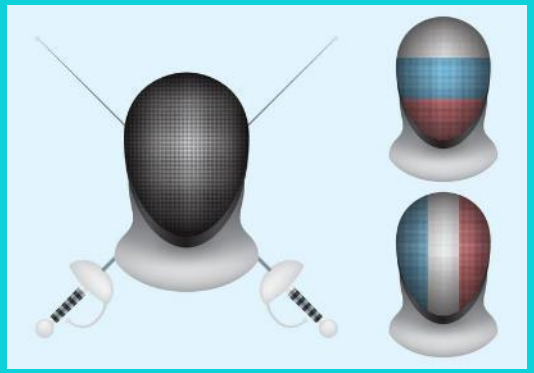
Chainmail

Medieval Life?

Chain mail, also called Mail, form of body armor worn by European knights and other military men throughout most of the medieval period.

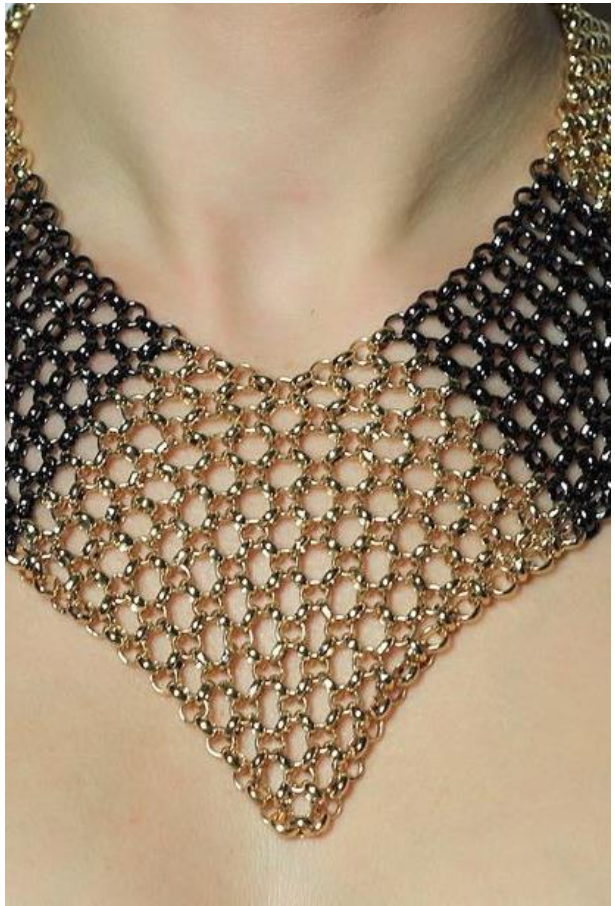
An early form of mail, made by sewing iron rings to fabric or leather, was worn in late Roman times and may have originated in Asia, where such mail continued to be worn for many centuries..

Safety



Clothing

Jewelry

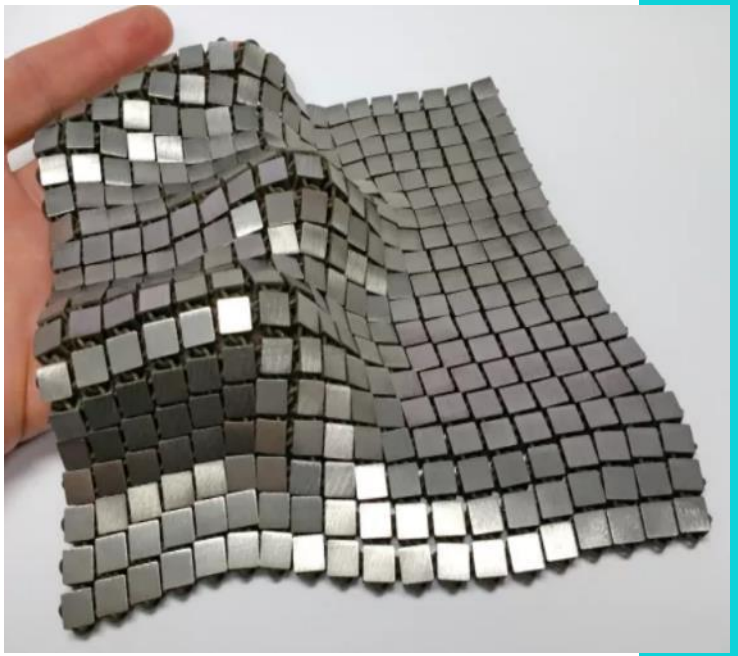


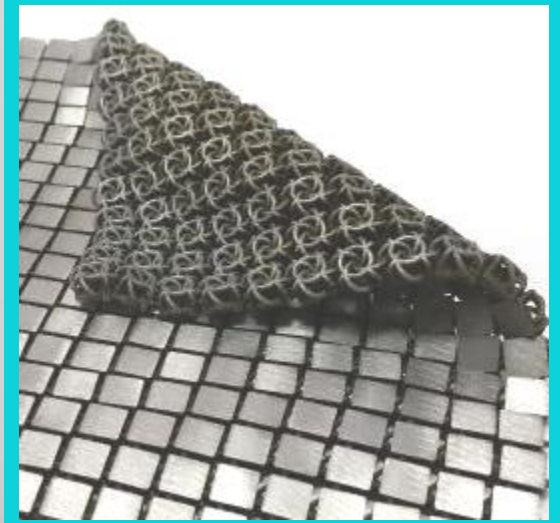
Nasa

The material produced by NASA is 3D printed by a machine, which means it could be produced as needed **on the space station**, or on other off-Earth habitats, depending on where we travel in the coming decades.

The **top**, which looks like a mosaic of shiny metal tiles, is able to reflect light and serve as a form of passive heat management.
The **other side**, which looks more like traditional medieval chain mail, can absorb heat instead, allowing it to serve as insulation.

Used in:
• space suits
• on habitats
• wrapped around vehicles and spacecraft to help protect them against unforeseen hazards
• laid down on alien terrain to give us a safe place to land a ship.

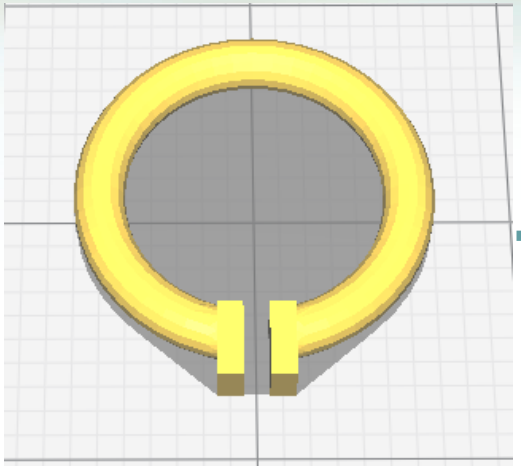


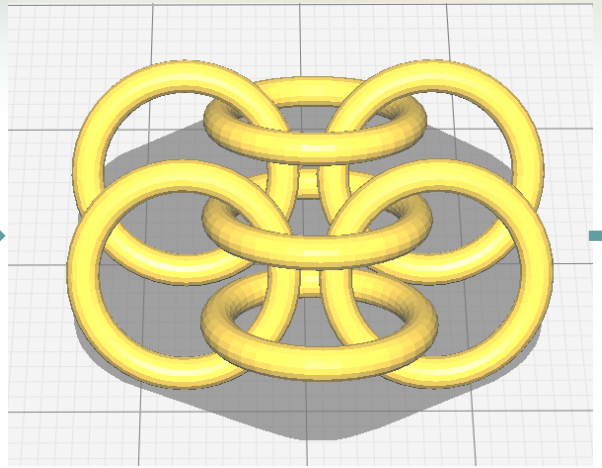


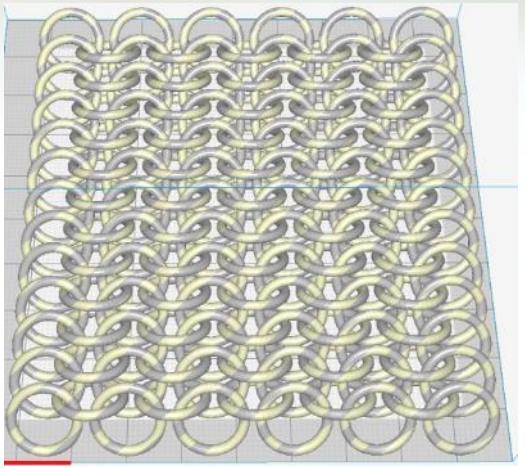
Chainmail

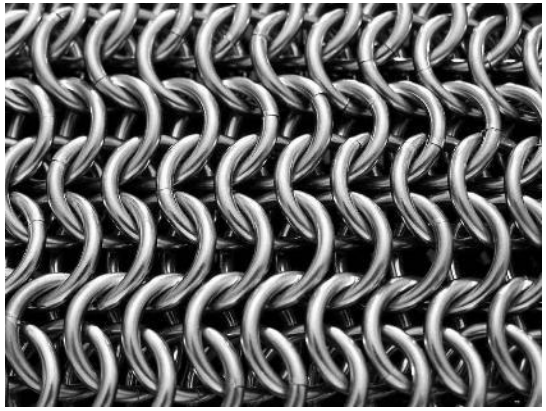
3D printed patterns

Round rings



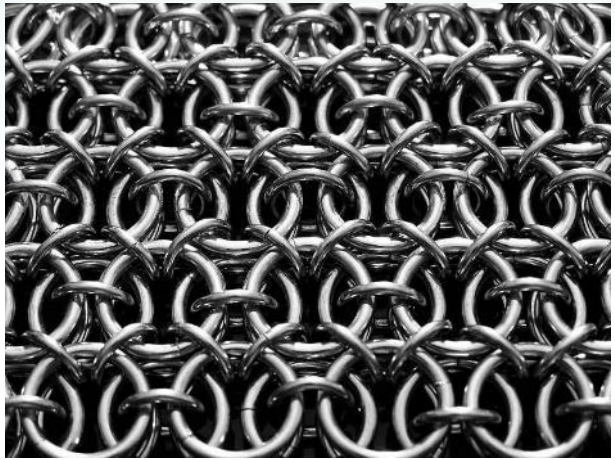


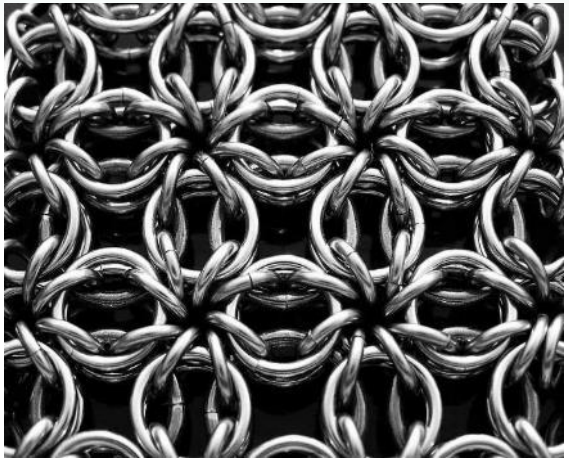


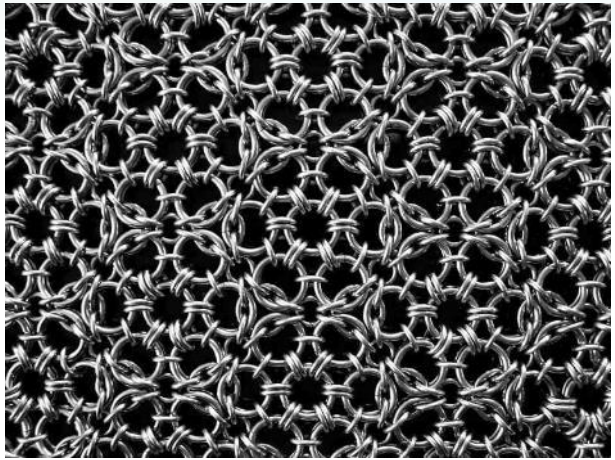


Round rings II

Other ways to connect the rings

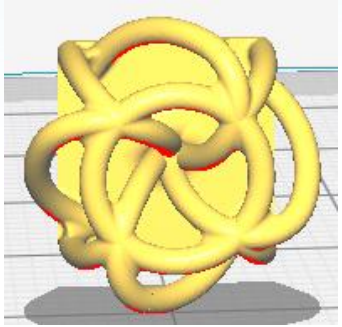


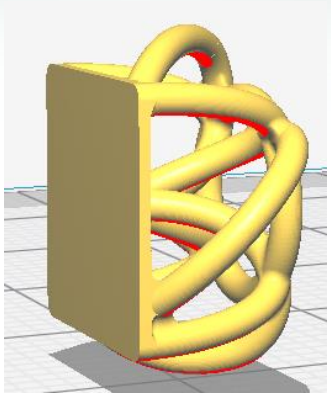


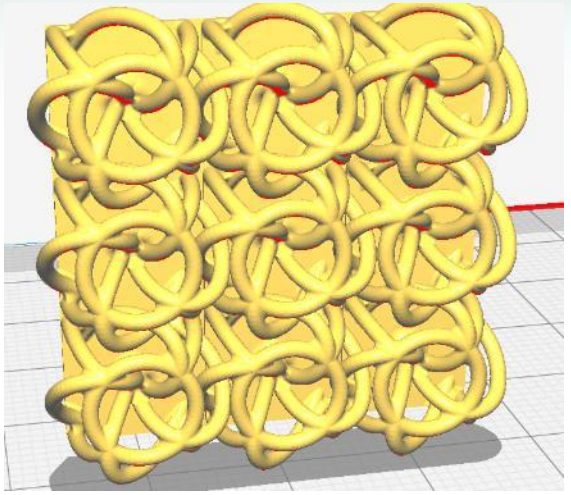


Can we 3D print all the patterns?

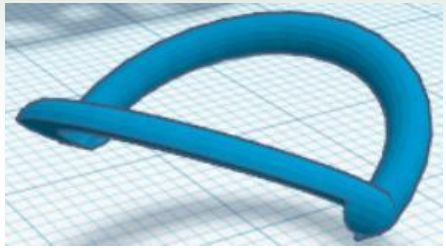
NASA chainmail

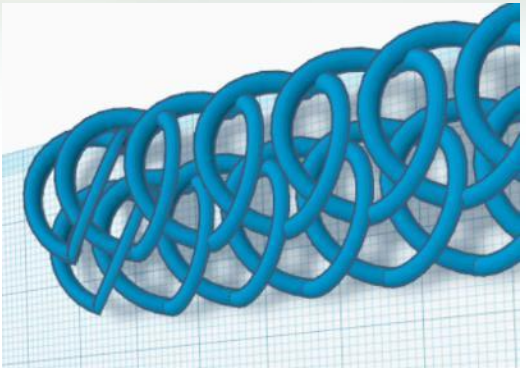


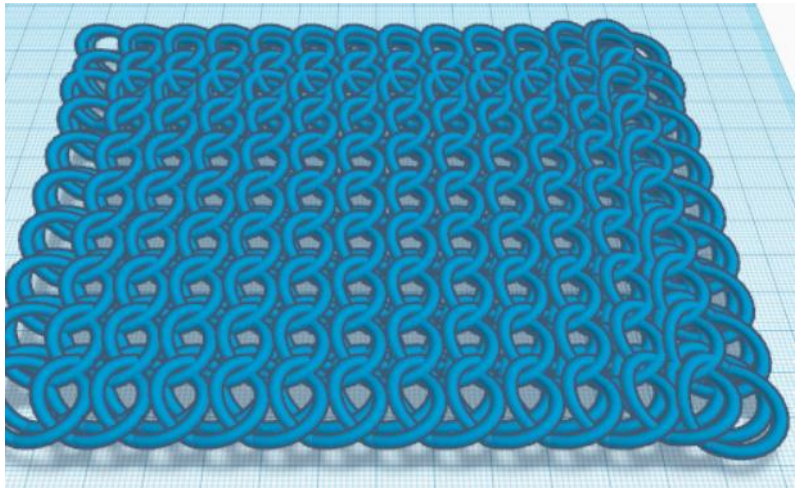




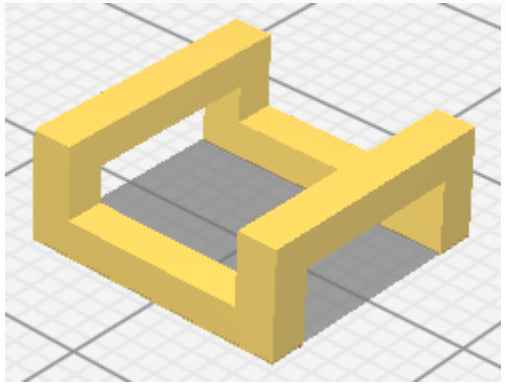
Heart Shaped chainmail

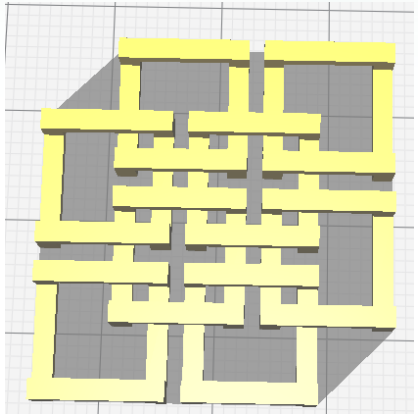


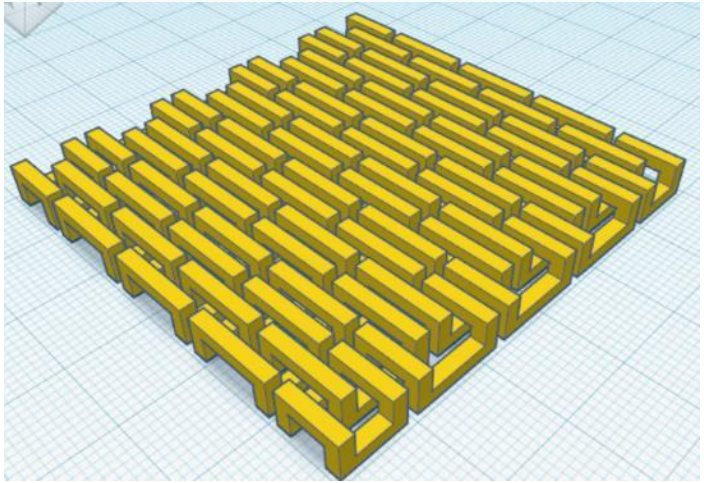




Easy to print







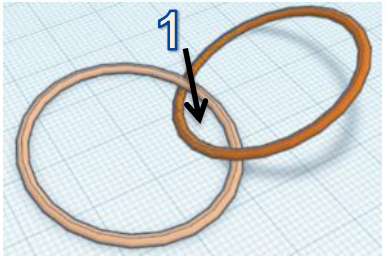
Chainmail

How to create one?

The Connections concept I

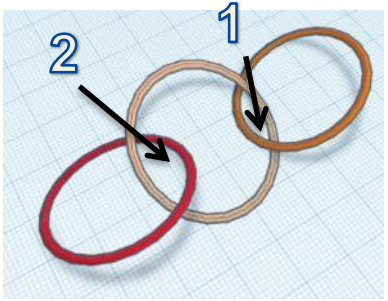
Chainmail is all about connections

1



How many connection points are there? → 1

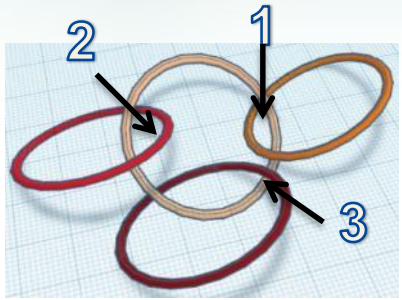
2



How many connection points are there? → 2

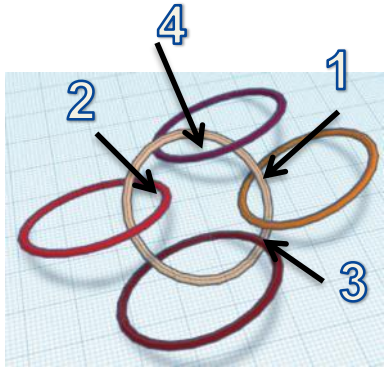
The Connections concept II

3



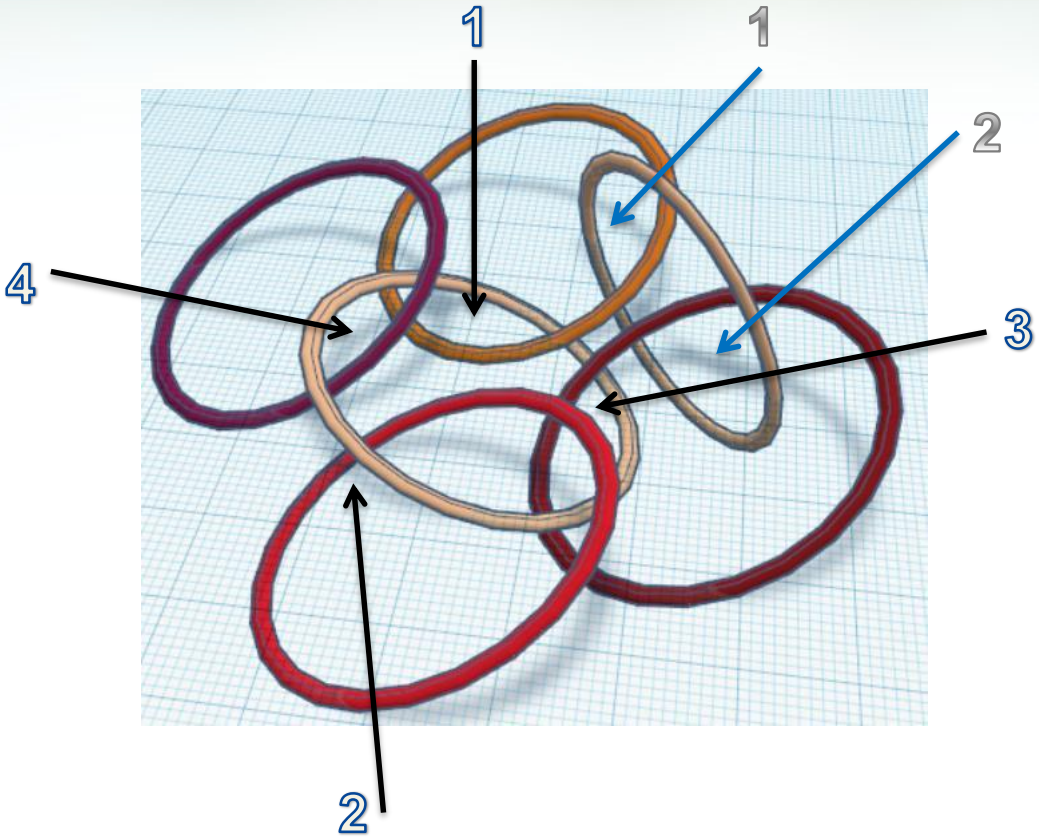
How many connection points are there? → 3

4

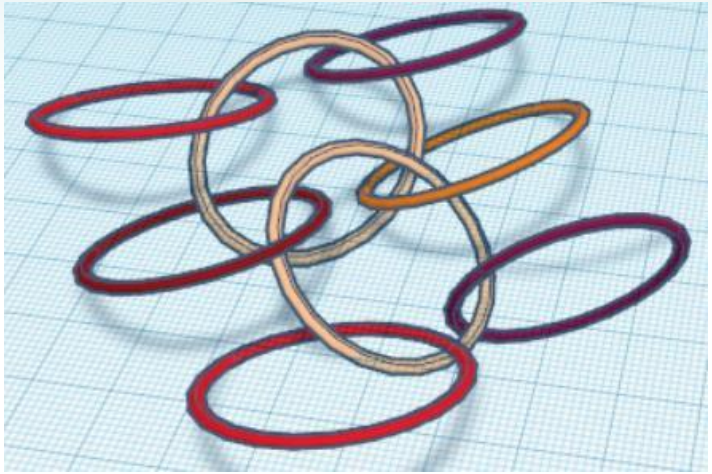


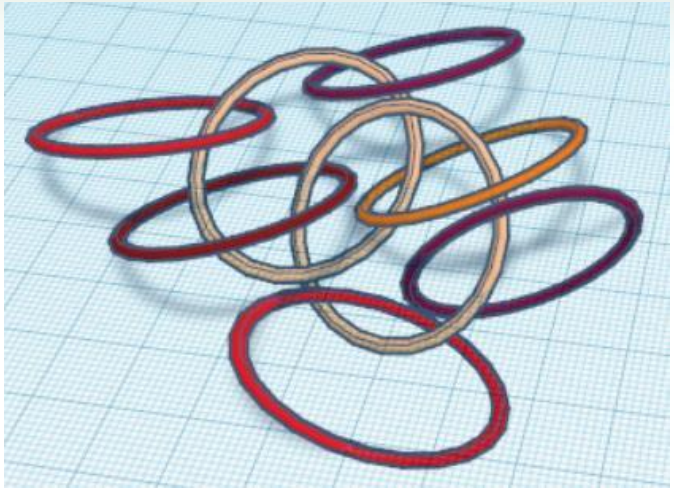
How many connection points are there? → 4

The Connections concept III



Is there any other way to connect the rings?

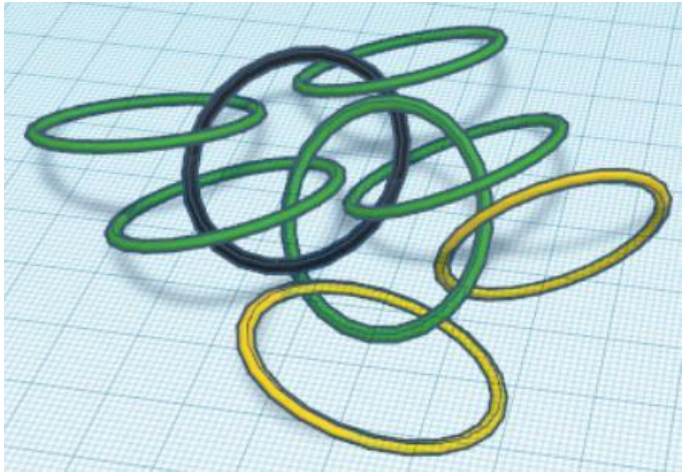




What did we change?

Add a connection

Change the output

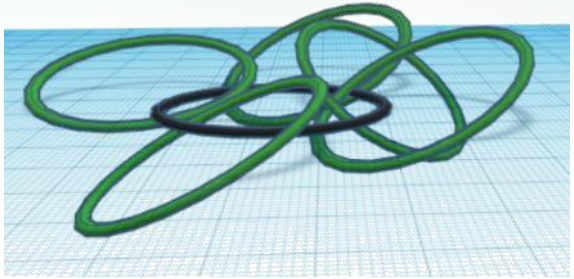


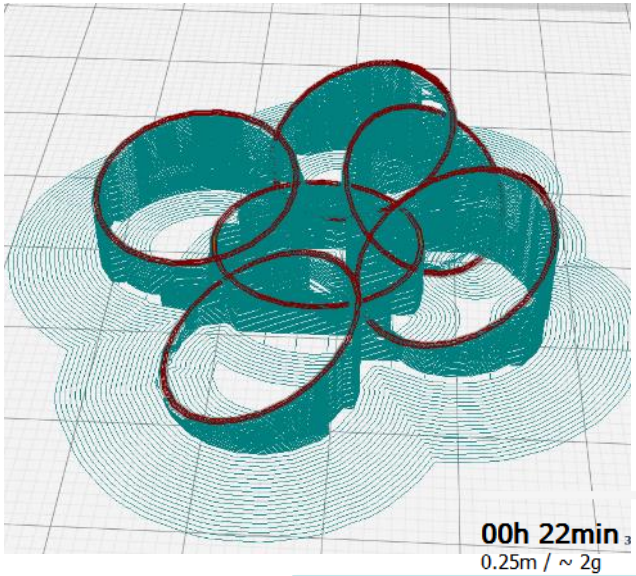
The black ring is the main (first of our chainmail) ring we focus on. How many connections (rings directly attached to the black ring) are there (green rings) ?

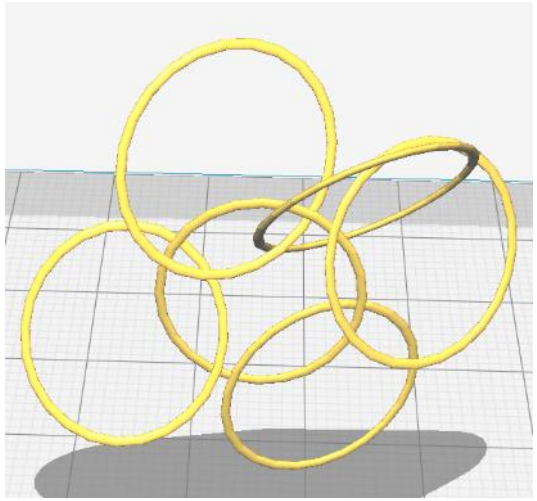
In order to understand and build a chain you should identify the connections on the basic “ring” of the chainmail.

Support

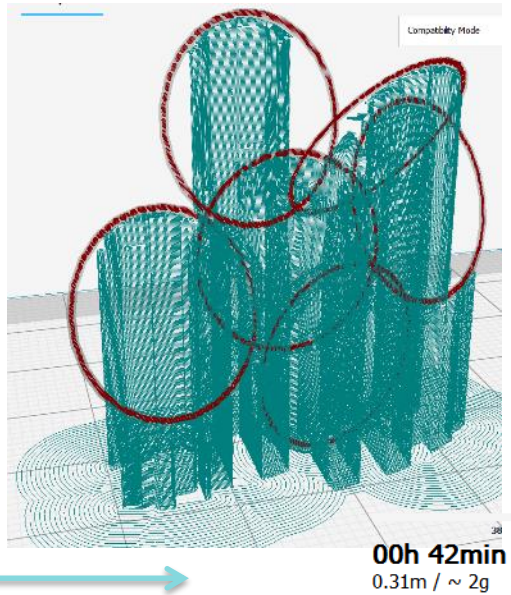
Assembly a chainmail… is it enough?







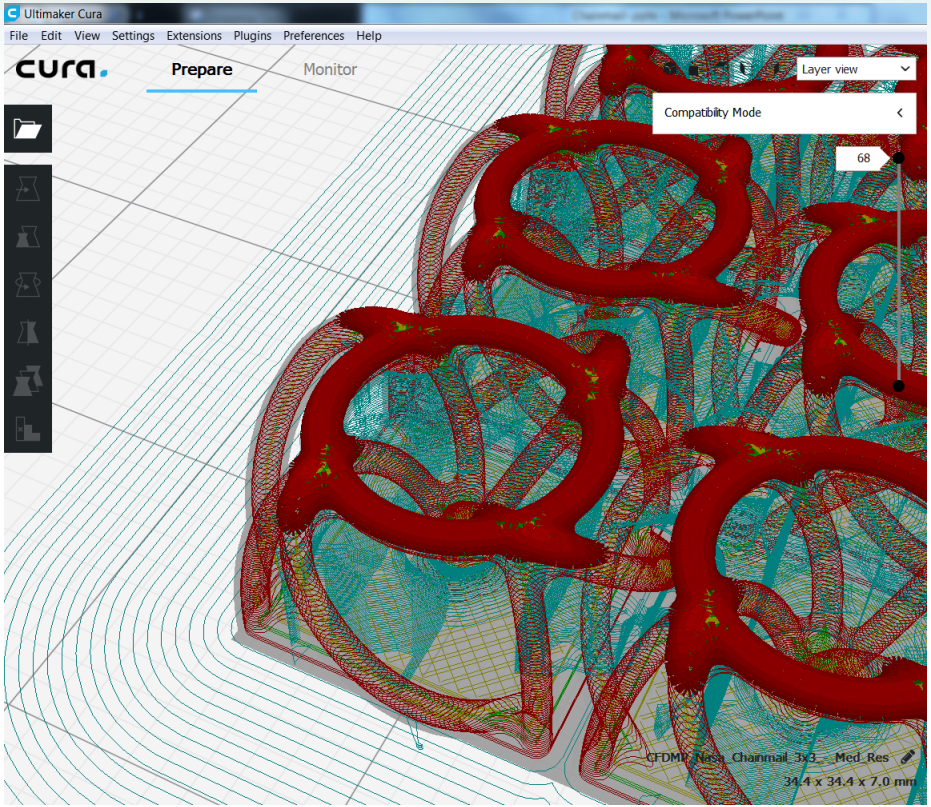
Support optimization ??



3D Print results

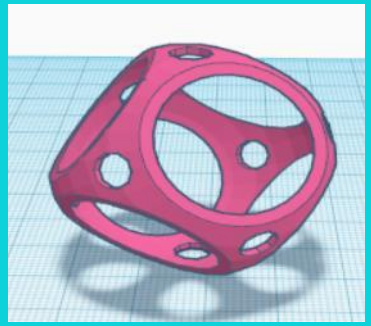
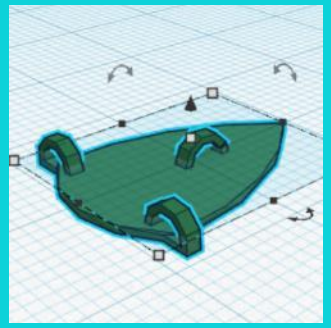
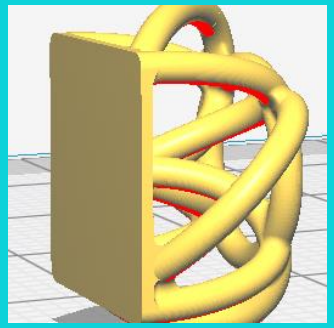
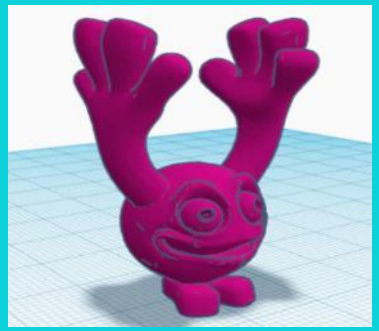
Nasa 3D print

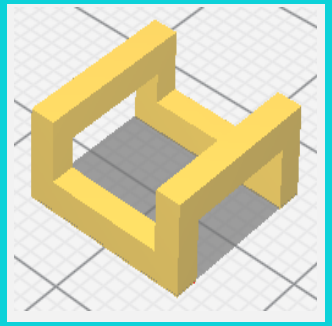
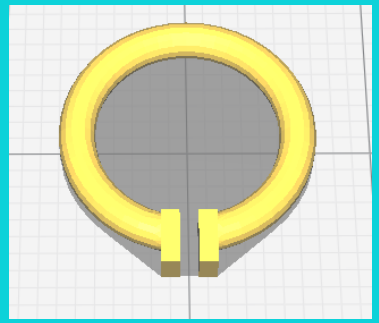
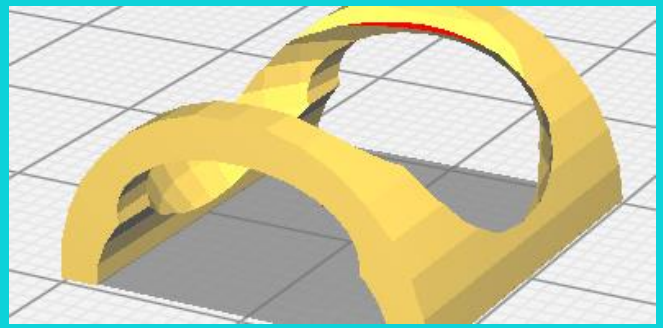
Support



Chainmail

Create your own

Choose your Basic model

Or create your own.

Let’s design our own chainmail model. Pick a chain link from the ones in this slide, find one in the internet or create something entire new.

It’s up to you!!

Thank you

For your attention