



# 3d Ocean: Recycling

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# Agenda

- Ocean Plastic Pollution
- Clean Up the planet
- Circular Economy principles
- Tools to recycle the plastic
- 3d printing with recycled plastic
- Planet Cleaning event



# Ocean Plastic Pollution

What happen in the world



# Ocean Plastic Pollution Data

- In 2014 plastic production was 331MT
- Ratio of plastics to fish 1:5 (2014)
- 2050 forecast: 1,124 MT
- Ratio of plastics to fish: more than 1:1

All data come from ELLEN MCARTHUR FOUNDATION



# From Data to Action



# Risk and data

- At present, less than 5% of the world's plastics are recycled and it is estimated that only 40% of the material ends up in landfills while the remaining part is dispersed into the environment.
- The value of this material is between 80 and 120 million dollars per year, an enormous amount especially if we consider that 95% of this plastic is dispersed or destined for waste.
- The risks to the world ecosystem (and to humans) are enormous: in fact, the pieces of plastic ingested by fish affect their endocrine and immune systems, thus climbing up the food chain to reach our tables and bodies.



# Clean up the planet



**How do we stop millions of tonnes of plastic from entering our ocean every year?**



# Circular Economy

## Definition

- The current industrial model is based on “take, make and dispose”, but we need a new model, the CE model.
- The CE is restorative and regenerative by design.
- Designing process is fundamental for CE.

## Video Resources to understand:

- [https://youtu.be/\\_9mHi93n2AI](https://youtu.be/_9mHi93n2AI)
- <https://www.youtube.com/watch?v=zCRKvDyyHml>
- <https://www.youtube.com/watch?v=TtR1ibE8Zt0>

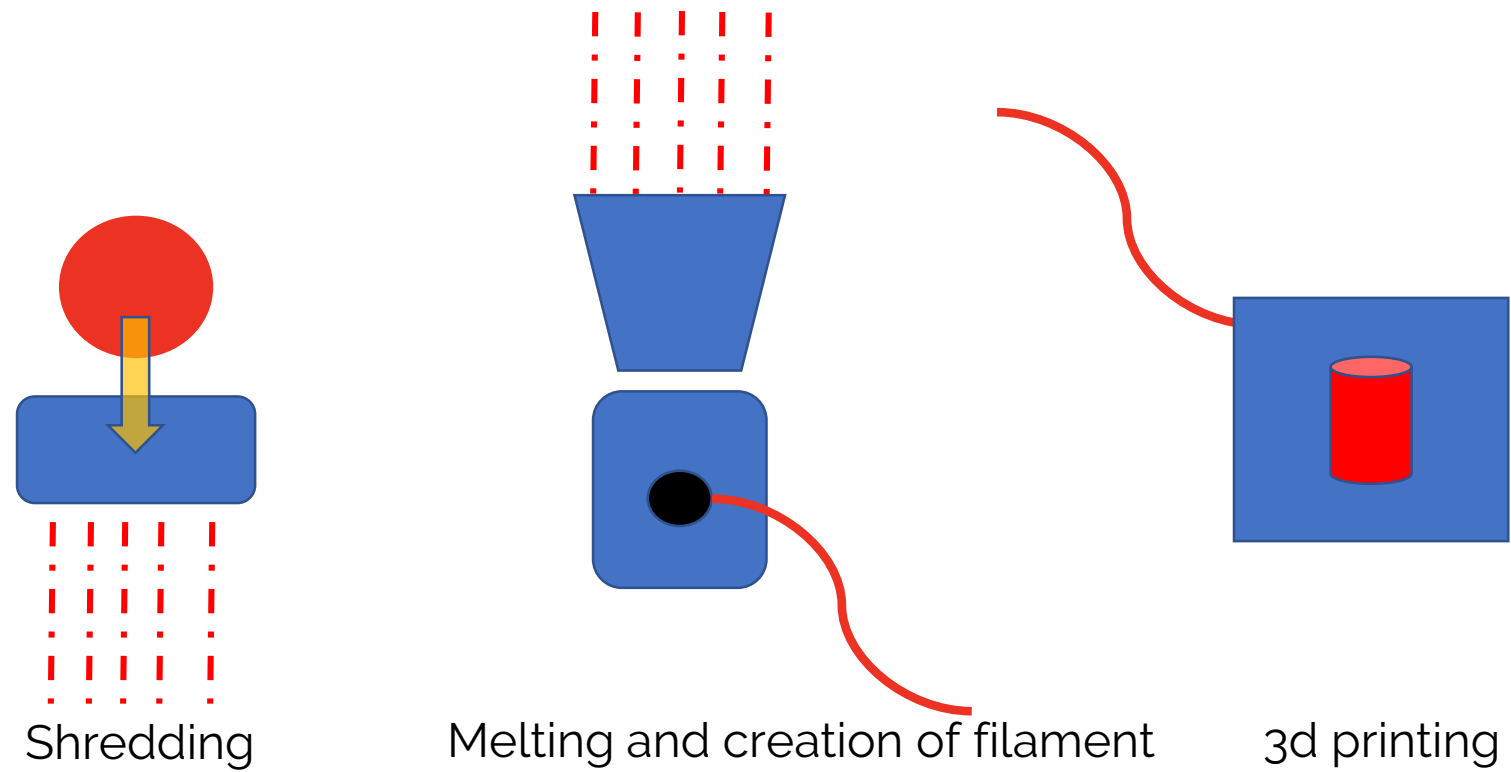




# TOOLS to recycling plastics

- We can setup our fablab, 3d printer center, educational center to recycling some different plastics.
- In the next slides we will show possible tools to use.

# TOOLS to recycling plastics



# TOOLS to recycling plastics





# Which plastics we can recycle?

Thank to this system we can recycle 2 types of plastics:

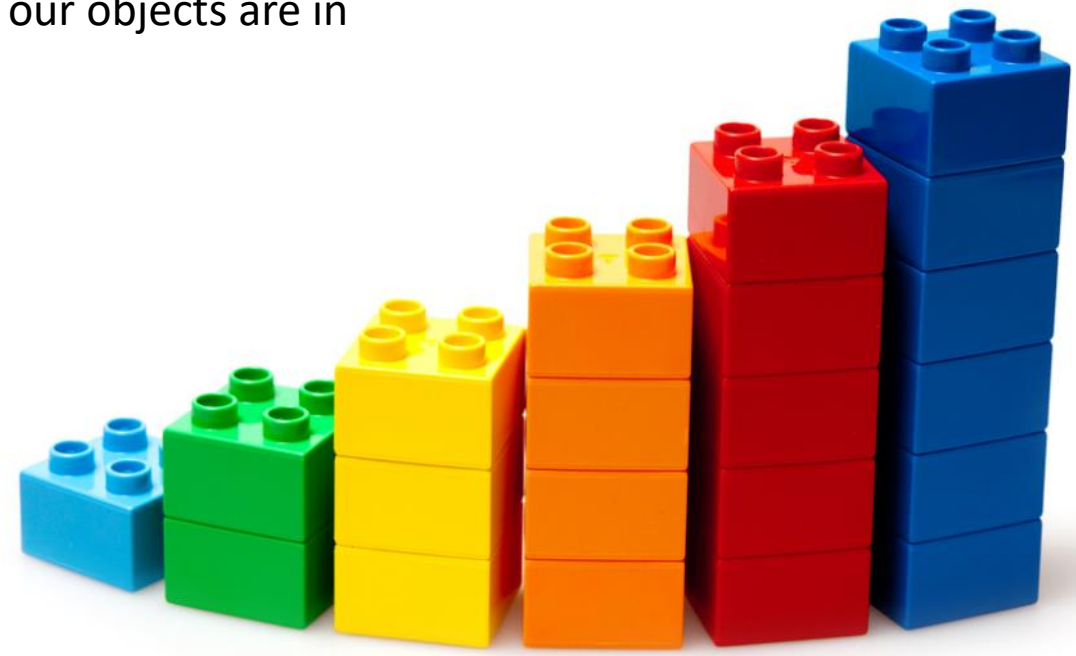
- PLA
- ABS



# Find the plastics

ABS is one of the most "popular" plastics and a lot of our objects are in ABS!

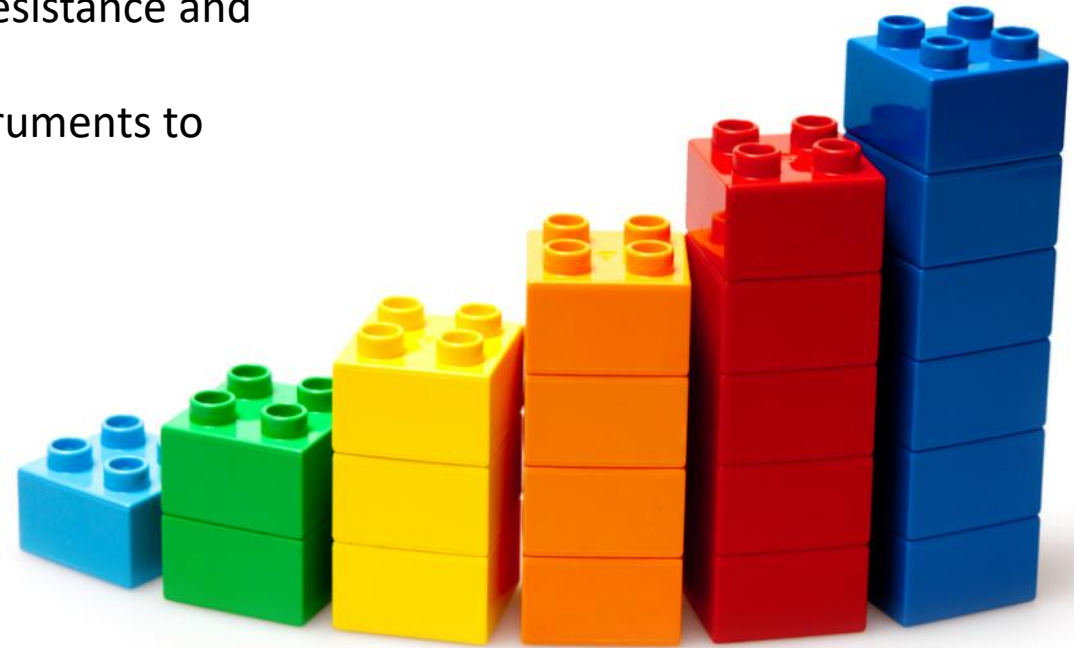
The activity is find an ABS object to recycle.





# ABS

ABS is a very common plastic, with an high value of resistance and toughness.  
It is very common from toys to cars, from musical instruments to keyboards.





# PLA

PLA is a vegetable plastics, created by renewable source as corn, cassava roots, sugarcane ect.  
PLA is very used in the 3d printing world.





# Final activity

- Pick up plastics during a “planet cleaning event”
- Classification of the plastics
- Recycling of ABS and PLA for 3d printing process.

