

# BLOOM Stories of Implementation

## Title of your Story

Copernico in Bloom

## Name of the author

Donata Federici Monesi & Patrizia Zambonelli

## Category

Please indicate with an "X" which prize category you wish to enter. Note that each category is judged according to specific criteria (to be found on the competition page and in Terms and Conditions). Only one category should be selected.

1. Teaching with bioeconomy in primary schools (individual work)	
2. Teaching with bioeconomy in secondary schools' STEM classes (individual work)	
3. Integrated STEM teaching with bioeconomy – collaborative teaching (teams of two STEM teachers of different subjects)	
4. Integrated STEAM teaching with bioeconomy – collaborative teaching (teams of up to three teachers of different subjects, including at least one STEM teacher and at least one non-STEM teacher)	X

## The BLOOM resource used

Please indicate with an "X" which BLOOM School Box resource you implemented in your class.

Bloom your school with your biofuel and soap lab	
Examining the thermal properties of bio-based building materials	
<a href="#">Building a new environmental Future</a>	X
Growing plastic and new life for plastic	
How poop will change the world	
Don't waste your waste! - Raising Bioeconomy awareness	





Please indicate with an "X" which BLOOM School Box resource you implemented in your class.	X
Yeast, biofuels and novel biotechnology techniques'	
Let's talk about bioenergy and our lives!	
The benefits of composting – How we can produce organic fertilizer in our school garden	
Biofuel production from fruit waste	
Back to the Future	

## Abstract

**Please briefly summarise your implementation (maximum 200 words).** Note that this summary will be used to disseminate your work, so it should be concise and appropriately reflecting the content. Make sure to add up to 5 keywords that you think best describe your implementation.

Our implementation of the school-box chosen learning scenario (Building a new environmental future) aims to promote awareness of environmental issues and promoting best practices, not only in a learning environment but also in our everyday habits, in order to develop more sustainable and eco-sensitive attitudes and behaviour; for both as educators/learners and mostly as responsible citizens.

Our aim is to help students develop critical thinking skills and acquire knowledge about the reusability of natural resources and bio-resources. Through an inquiry-based approach and a certain degree of gamification, students are asked to reflect on key issues of today's global challenges. To name a few: the viability and advantages of a bioeconomy over the traditional economy, use-and-throw logic, the positive implications of renewable products and resources, and bio-based resources. Working in groups where roles are defined and functional to a "collective narrative", students will become aware of the role each one of us can play in the global environmental preservation and think creatively about a new life for many of the products we use/consume. They will also become agents of change, doing their own research on bioeconomy and acting as virtuous ambassadors for a respectful attitude towards natural resources and their limited availability.

Keywords: Awareness, Reusability, Responsibility, Bio-Economy & Critical Thinking

## The implementation context

**Please briefly describe the context of your implementation**, specifying: what subject(s) you chose to implement the resource in, what are the students' ages, the size of the group, previous familiarity with bioeconomy activities, etc. (maximum 200 words).

*Please note that the competition looks to collect stories of classroom implementation, so the context must appropriately reflect this.*

Liceo N. Copernico is an upper secondary, state school with courses in scientific and applied science subjects. The subjects for the implementation of our story are Science and English. The pupils, all aged between 14-15, first grade. The course they attend has a special focus on scientific subjects (Maths, Physics, Computing and Science cover most of the weekly hours) and



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STEM methodology. The highly motivated class comprises 29 pupils and has no previous experience with bioeconomy activities. The teachers involved (Federici Monesi/English and Zambonelli/Science) have previously collaborated on a large-scale, European scientific project on raw materials (RM@schools, promoted by the local branch of CNR, [Centre for National Research](#) and [Liceo Copernico](#)). They have also taken part in workshops on raw materials in Amsterdam and Berlin, co-operating and gaining considerable insights into environmental issues.

Zambonelli has a wide expertise in the field of laboratory work and regularly involves her students in lab inquiry-based activities. Federici Monesi is the school's European Project Coordinator and has collaborated with different colleagues to CLIL modules on scientific content such as Galileo Galilei's experimental method or Maths didactic units.

Both teachers are used to working in team.

## Your story

**What did you do?** Please describe how you used the BLOOM School Box in your teaching. For example, what was the structure of the session(s); did you make any adaptations to the resource?

*If you are entering the competition in categories 3 or 4 (collaborative teaching), describe how you worked together with your colleagues to carry out the lesson. (maximum 400 words).*

Our story was planned as a series of lessons to be delivered in parallel as a collaborative learning experience in both subjects: Science and English. Starting from an inquiry into what students might know about bioeconomy through the School Box given (see on Step 1). Then delving into the topic through a series of collaborative, game-based and participatory activities ([Kahoot](#), [Snakes and Ladders](#), [Padlet](#)), plus a group work. Starting from the Learning Scenario provided and in-depth analysis of topics such as sustainability, bio- and circular economy as well as recycling. Unfortunately, the Covid-19 lockdown changed our plans, so all the activities were carried out and implemented as e-learning activities through Google Classroom. Here is our story of online implementation road map (March-April 2020):

**STEP 0:** A Kahoot survey was shared with the students to find out what previous knowledge the class had of the topics given

**STEP 1:** The first video of the school box ([video 1](#): The Bioeconomy starts here!) was shared and students were asked to give their written or oral comment on it, reflecting on the key-concepts of bioeconomy and sustainability;

**STEP 2:** Students had to reflect on the meaning of sustainability; each one of them had to provide examples from their own lives, reflecting on good practises of saving and recycling. Each student handed in his/her comment on his/her lifestyle and was made to think over non-environmentally friendly behaviours.

Stop And Think: a "pit stop" was needed to gather ideas about the long-debated issues of waste disposal and the limited availability of raw materials and natural resources; a further video was shown ([The long History of Trash](#) – content in Italian) and the students' feedback elicited through our Classroom stream.



**STEP 3:** Starting from the bio VS non-bio item chart available in Annex 1 of the learning scenario chosen, we shared the template with our pupils and asked them to pick some household objects of bio- and non-bio origin and compare them, reflecting on their properties, reusability and environmental impact.

**STEP 4:** Two more videos from the School Box were shown and the students' feedback elicited; as a further step, students had to carry their own research on sustainable enterprises (step 5);

**STEP 5:** Individual research on bio-based start-ups and companies in our area/country.

**STEP 6:** Comprehensive Padlet for dissemination; a school exhibition where to share and disseminate the results of our work at school and possibly a dedicated webpage in the school website final product of our story of implementation [Padlet results](#) (See in the [Annex](#))

## Learning outcomes

**What did you achieve?** Please describe the main learning outcomes you achieved with the implementation of the selected School Box resource. Tell us about anything that supports your case for achieving these learning outcomes. For example, student comments, or any other evidence that illustrates the benefits and impact of your use of the School Box resource.

Note that you MUST have permission to include any photographs, especially parental permission in the case of young people. Any pictures you include should be added directly to the entry form.

The implementation of the selected School Box resource has helped to raise our students' awareness about environmental issues and become familiar with key-concepts such as bioeconomy, sustainability, and circular economy. Which they knew little or nothing before the start of the project. They have become aware of the reusability not just of common and everyday objects but of products of biological origin as well, such as fish frames or spider webs, as explained in the videos of the School Box. Not only have they through a Kahoot GAME become aware of the importance of environmental issues, but they have also carried out their own research through an inquiry-based approach, looking for companies or virtuous enterprises that care for the environment whilst innovating their production processes. The aim of the project was to help our pupils gain a wider sense of personal and collective responsibility towards the environment and our future, and to develop critical thinking skills.

## Teaching outcomes

**What did you, as a teacher (or a group of teachers) get out of teaching with the BLOOM School Box?** What would you say to other people thinking about using bioeconomy in their teaching?

*If you are entering the competition in categories 3 or 4 (collaborative teaching), please also describe your experience in collaborating with teachers of other subjects in your classroom. What is different from traditional teaching? (maximum 200 words).*

As English and Science teachers, we decided to take part in this competition not only to develop a blended approach to issues of bioeconomy and sustainability, but also to show our pupils that such issues need to be tackled by joining forces, through teamwork and collaboration. For this reason, working together helped us teachers and the whole class to think "out of the box" and develop new competences.

The choice of the School Box "Building a new environmental future" proved to be quite smart choice, given that we could not meet at school and had carried out all the activities of our "Story of Implementation" through e-learning. The videos in the School Box and the annexes were really helpful, as their immediacy and strong impact helped students familiarize with the topics



covered. Lastly, working on scientific issues while developing foreign language competences proved to be a two-fold benefit for all the class and helped us teachers to think as a team. All things considered, we believe bioeconomy ought to be integrated in any school curriculum not only as a way to think critically, but also to help students develop citizenship skills of respect for themselves and the environment.

## About the BLOOM project

[BLOOM](#) is an EU Coordination and Support Action implemented from 2017 to 2020. The project aims at bringing together partners from across Europe to debate, communicate, and engage the public in the potential of bioeconomy. An economy based on biomass promises to foster a circular economy and to enhance climate change mitigation while reducing dependence on fossil fuels. Bioeconomy covers a broad range of sectors, from agriculture and the agrifood industry, to fisheries, forestry, biorefineries, chemistry and (bio) energy – but despite its many applications, it has yet to enter into the public consciousness as an exciting solution to societal challenges.

## Annex

The Annex contains the results of the Padlet, please scroll down to the next page to see it.



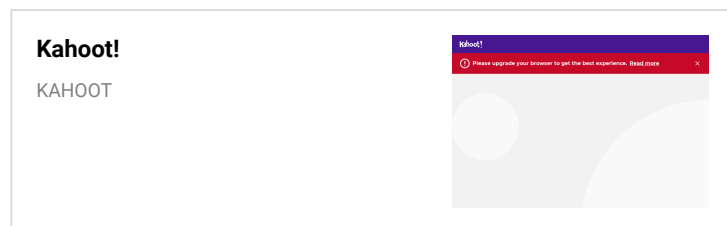
# COPERNICO IN BLOOM-Class 1X Liceo N. Copernico Bologna, Italy

BLOOM PROJECT-Stories of implementation competition by [www.eun.org](http://www.eun.org)

DONATA FEDERICI MONESI 05 MARZO 2020 08:07

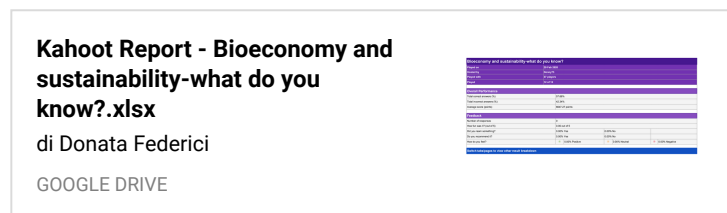
## WHAT WE MEANT TO DO AND WHAT WE KNEW BEFORE STARTING THE BLOOM PROJECT: STEP 0

To find out what each student knew about bioeconomy and sustainability the English and Science teachers launched this KAHOOT



### Here is the report

According to the results, 57,66% answers were wrong and 42,34% were right, which means most students knew little about the topics of BIOECONOMY AND SUSTAINABILITY; the most difficult questions were related to the concept of Sustainability



**What we had planned to do but could not achieve because of the Covid-19 lockdown:  
TO FIND OUT ABOUT BIOECONOMY AND  
SUSTAINABILITY PLAY THIS SNAKES AND  
LADDERS BOARDGAME IN GROUPS:**



**HOW TO PLAY THIS GAME:** In groups, students play the board game by casting their dice and moving to one cell to the next. In each cell there is a question about bioeconomy, environmental issues and sustainability. Each group discusses the question on the cell they step into as the game goes on. Finally, each group shares their answers with their classmates from the other groups.

## WHAT WE DID: STEP 1

### Activity 1:

Watch the BLOOM video and give your response about it in a hundred-word post on Google classroom





**The Bioeconomy starts here!**

di EU Science & Innovation

YOUTUBE

## HERE ARE SOME OF THE STUDENTS' RESPONSES:

### Alice V. and Giorgia M:

"We think the video was interesting and it explained really well the concepts.

The video was about bioeconomy, a circular economy which is sustainable because it relies on products from nature.

It said that fossil fuels are used to make many things but they are non renewable unsustainable resources so we need to use more renewable sustainable resources.

Sustainability means the ability of maintaining something that works in the future too and doesn't pollute the environment.

The video said that it's important to develop new innovative and diverse products like healthier food, revolutionary medicines, green energy and bio-based consumer goods.

All of that would help the growth of sustainable economy. "

### Gaia L:

"The video explains how the use of non-biodegradable materials affects everyday life, despite the fact that many people love nature.

Indeed, the use of fossil fuels is essential for the production of energy, plastic, textiles and many other things. On the other hand, however, fossil fuels are non renewable resources, so we need to find an alternative to them.

Because of this need, scientists are discovering that biological resources can help us find similar products. That's the bioeconomy, which is the use of elements that can be replaced in a sustainable cycle.

For example, we can use spider silk to product computer chips or optical fibers.

New technologies will provide new job opportunities, new types of industries and sustainable economic growth."

### Paolo I.

"I think that, in our society, choosing bio or sustainable products isn't easy for two reasons: bio products are really expensive and we ignore the importance of choosing sustainable ones. In a few years there won't be more petroleum left and most of our objects are made of plastic, for this reason I hope that in the future all the people will become aware of the situation and will help the improvement of new sustainable technologies that will replace plastic and petroleum. Besides of it, most of the times, the non sustainable products are polluting too. Bio economy can use renewable products from the nature to make up sustainable objects."

**Nuovo memo 2**

PADLET DRIVE

### Lorenzo M.

I learnt that Bioeconomy is a way to think up and product items similar to the ones that we already use, based on the consideration of the impact that the production would have on the environment. Indeed, Bioeconomy tries to replace items that come from polluting, nonrenewable resources with similar ones that are environmentally sustainable, that means that their production and disposal doesn't have negative effects on the environment.

The best way to create sustainable products is through a circular economy based on renewable resources, that is a system where everything that would get thrown away as "garbage" gets, instead, recycled and, at least in part, used as a resource to create other useful things, and where the first amounts of matter and energy necessary to the production come from sources that can be recreated in a short time without damaging the planet.

Unfortunately, most of people don't support Bioeconomy because they think that it's too expensive to be put into practice



and that it would make them lose their job, especially if they work with some of the products that wouldn't be used anymore. But, actually, the implementation of Bioeconomy would create new jobs so it wouldn't be so dangerous for the global economy; actually it would be the best thing for our planet.

**The Bioeconomy starts here**

PADLET DRIVE

Adele P.

**The Bioeconomy Starts Here! 3**

Audio di 0:54

PADLET DRIVE

Giacomo M.

In this video we can see how bioeconomy can change the world. We can make the world a better place starting tomorrow but it's impossible to do it with only a few other people, because this dream means that everyone has to do their part. The video also shows that bioeconomy means using sustainable and natural products for doing the same or similar things that we used to use every day without knowing how dangerous they could be to the planet and therefore for each one of us. If we want to do this and we work hard for this, we can change the Earth, we can save the planet.

Luca B.

ith this video I have learnt that bio-based products products bio are more sustainable than other products because they pollute less and can be recycled. The bioeconomy will be our future and so we must commit to using bio products to protect our planet and the life of our children. So I have promised myself to eat and use more products bio to save the planet.

Alex L.

The video talks about bioeconomy and sustainability, a very interesting topic in my opinion. Now almost everything isn't sustainable, but if we begin to create new things using natural materials it will be better for all the world. Infact a lot of "everyday things" we use aren't made with bio materials and are non-renewable. Watching this video I learnt that using renewable materials is very important for our future.

Alberto F.

We use fossil fuels for a lot of things like clothes, plastic, and mostly for energy. In the world, fossil fuels are the main energy source, but they are not renewable, so they will end. The bioeconomy is a way to produce something using remewable energy and organic products. This different way to produce will create new jobs and a sustainable economic growth. In this way we can create a better future because all the products we use will regenerate and we will also reduce pollution using different energy sources like hydroelectric or solar panels.

WHAT WE DID: STEP 2



## We want to have your say on sustainability, on saving and wasting!

After watching the video, think about this: how much of what we use every day can be saved or is wasted? Think about your own and your family's experience: How many of the items you use everyday come from bio-materials? How sustainable are you?



DONATA FEDERICI MONESI 2 mar

Write a short paragraph or shoot a video discussing which bio- and non-bio based materials you use in your everyday life and post it/send it to me. In English, of course! 🇮🇹

100 punti

## HOW SUSTAINABLE WE ARE:

### Aurora F.

Every day my family and I use a lot of items, but not all of them come from bio-materials and can be saved.

For example we sometimes use plastic glasses, plastic food containers, aluminum baking pans for cakes and plastic bottles.

We also use glass bottles of water, glass glasses and we have clothes made of recycling cloth and bottles made of recycling plastic.

I think I am quite sustainable, but I also know that I can do better even if sometimes it isn't possible for me.

For example every morning my father drives me to school by car, but I can go on foot or by bike, in fact I asked to my parents to go to school by bike, but I always return home by bus.

I prefer to use the water bottles to drink water and when it is possible for me I do it.

I always try to be the most sustainable possible.

**TERESA P. My family and I try to be sustainable all the time. We use a lot of items that come from bio-materials. For example, we use wood furniture in all the rooms of my house: wardrobes, drawers, bookshelves, chairs and doors, they all are made of wood. When we do the shopping we don't take plastic bags but bags in mather-B. These bags are compostable and more sustainable. My family and I are trying to use more bio-materials sustainable for a better future**

### Tommaso M.

In my life I use steel bottles made with bio-based materials instead of the normal plastic bottles and organic trash bags. As school notebooks, I use recycled sheets of paper. When I do the shopping, I use organic shoppers. About clothes, I prefer wearing recycled sweatshirts. When I drink something at home, I use bio-based straws.

### PAOLO L.

In my family we try to be sustainable every day:

-I go to school by bus and my father goes to work by bicycle;

-we do not use plastic cups and buy some glass bottles every month: a man brings us some bottles full of water and at the end of the month we give him the bottles without water to be able to reuse them;

- we also buy only food without chemicals and sometimes also whole wheat pasta.

### Chiara C.

In my family we use a lot of non bio-based products because they don't cost much. Many times we use plastic items like shopper bags or bottles. However, we often drink tap water: we use a water filter and then we pour it into a glass bottle. When we wash the salad, the 'dirty' water is useless: it can be the water for plants.

### Alfonso N.

I asked my parents which bio based products we buy and use in our normal life, but I noticed that there aren't many, because supermarkets don't sell them at all.

Unfortunately the only bio-based products that we use are:

- 1) bottles of soap made with bio based materials;
- 2) plastic containers also made with bio-based materials,
- 3) everyone in our house uses recycled paper to write or draw

## STOP AND THINK: WHAT ABOUT ALL THE WASTE WE THROW? (In Italian)

**Watch this video about the long-debated issue of waste disposal and reflect.**



invogliare anche i più pigri a dare il loro contributo. Quindi dovremmo esporre gli argomenti in modo semplice, ma esaustivo, magari avvalendoci di un sistema diretto e accessibile a tutti. Ad esempio, potremmo creare una pagina su un social network: in questo modo il messaggio potrebbe arrivare anche a chi cerca di evitare la questione, costringendolo a smettere di "girarsi dall'altra parte", e inoltre non avremmo problemi di costi di produzione o ulteriore inquinamento come accadrebbe invece distribuendo volantini.

## WHAT WE LEARNT ABOUT BIO- AND NON-BIO ITEMS: STEP 3

**Check out the BLOOM resource pack ANNEX 1 and find pairs of items in your household which are bio- or non-bio based, then discuss their properties, sustainability and compare them.**

### LA LUNGA STORIA DEI RIFIUTI

di Rinnovabili\_energie

YOUTUBE

## HERE ARE SOME OF THE STUDENTS' COMMENTS:

Aurora F.:

Sinceramente non mi era capitato molto spesso di pensare al fatto che i rifiuti rappresentassero un problema anche nell'antichità, in realtà non sapevo e non immaginavo che fossero un problema risalente addirittura al passaggio dall'essere nomadi all'essere sedentari da parte dell'uomo.

Questo potrebbe far capire e far intendere che l'uomo non è mai stato in grado di risolverlo, ma solo di "mascherarlo" e\o di allontanarlo, per esempio i primi impianti fognari costruiti dai Romani che, infatti, allontanavano i rifiuti dalla città.

Probabilmente al tempo questo rappresentava già una soluzione e prendendo in considerazione la poca conoscenza e la mancata organizzazione che avevano è abbastanza plausibile.

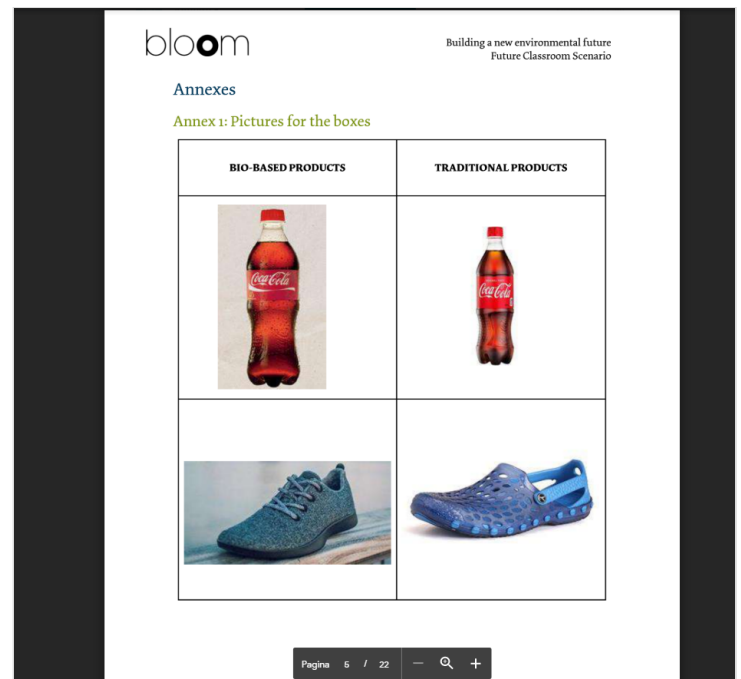
Considerando invece tutte le conoscenze che abbiamo e, soprattutto, tutte le fonti che possiamo consultare, è quasi surreale sapere che questa problematica c'è ancora, ma è altrettanto surreale l'atteggiamento indifferente e passivo di molte persone.

Bisognerebbe che tutti ci attivassimo per cambiare veramente qualcosa e per non mettere più a repentaglio la sopravvivenza dell'intero pianeta.

### Lorenzo M:

Sono abbastanza pessimista riguardo alla possibilità di rompere il muro di indifferenza che al giorno d'oggi sta rovinando la nostra società oltre al nostro pianeta; tuttavia penso che potremmo tentare di avviare una campagna di sensibilizzazione all'adeguato smaltimento dei rifiuti.

Questa campagna potrebbe puntare ad aiutare tutti a rendersi conto della condizione di pericolo in cui ci troviamo, al fine di



## HERE ARE SOME OF THE STUDENTS' WORKS:

Gaia L.



**In this period, the question of biodegradable straws has spread. In fact, experts say that to reduce pollution, it would be**



enough to eliminate the plastic straws. An alternative to these straws, is the edible straw, created in Italy. It is gluten free and GMO free, therefore completely biodegradable.






Giulio S.



On the left there is a plastic cup, the plastic glasses aren't sustainable products because they aren't recyclable and they are very difficult to dispose of.

On the right there is a glass and it is recyclable, so it's a sustainable product.



**classic\_products\_vs\_sustenaible\_products.odt**

Documento ODT


PADLET DRIVE

Alessia N. T.

**"Traditional" plastic bag**

**Pros:** It is light and resistant, it is reusable several times for the transport of materials and it is easily compacted.

**Cons:** At the end of the cycle of use it is difficult to recycle and has devastating effects on the environment, making the pollution of the land and sea even through microplastics.



**Paper bag**

**Pros:** It is quite resistant, it can be re-used several times. It is easily recyclable.

**Cons:**It is damaged by moisture, it is heavier than the plastic bag, more fragile and less adaptable.

**Bloom\_project.pdf**

Documento PDF

PADLET DRIVE

Filippo I.

Bio-based products are the future, because they are made by organic waste and not by oil like plastic objects; so they pollute way less than a normal plastic object.

Bio-based products can be reused a lot of times, whereas traditional products can't.

Multinational companies don't care about bioeconomy because bio-based products are more expensive than the common products.They are unresponsive about climate change because if they can earn a little bit more they do.

## THINGS WE DID NOT KNOW ABOUT BIOECONOMY AND WHAT WE LEARNT: STEP 4

**WATCH the BLOOM VIDEOS about Blue-bioeconomy and Finland's positive example of sustainability and find info about sustainable companies/enterprises in your area/country relying on the use of bio-based materials**





### The Blue Bioeconomy

di Matís Iceland

YOUTUBE

## Watch this video and reflect on the reusability of bio-based waste:



### Bio-economy in Finland 7.11.2016

di Maa- ja metsätalousministeriö

YOUTUBE

## NERO M:

I didn't know that fish waste can be bad for the environment but I also didn't know that fish waste can be used so much. In fact I ignored that we can do medicinal and cosmetics products from fish. I also was very surprised to discover that pine oil can be converted into fuel.

## DAVIDE M.

Watching the two videos about the bio-economy and the blue bio-economy made me understand how important organic materials are and how important it is to recycle and reuse them. The first video about the blue bio-economy, which deals with oceans and seas, describes a very important thing: the reusability of waste; it also shows how the waste of the fish is reusable, as many companies use the skin of the fish to make fabrics that are used in the clothing sector. It makes me understand how important is the waste that every day we throw away and understand that this will cause a negative impact on the environment unless we try to reduce it.

## TOMMASO S.

These videos are really interesting and I discovered things I didn't know. I discovered recycling items is very easy although not everyone does that. The most interesting thing I discovered is what you can do only with a fish and it amazed me how the Finnish people recycle

## FEDERICO A.

The videos were very clear and explained the environmental issues of recycling and sustainability very well, I think that the Baltic countries like Finland but also Norway and Sweden are the basis of the development of eco-sustainability and also the main exporters of this new use of waste materials.

I think that all nations should take example from them and start slowly taking measures to create a more sustainable economy and then to improve our lifestyle

## Serena B.

Thanks to these two videos, I learned that reusing waste is very important and that there is a way to reuse everything, also what we usually think is useless and that we throw away.

For example in the first video I found out that the skin of the fish can be reused to make clothes, food for fish and products for our skin and if we reduce the fish frames to dust, we can use them to make food supplements, cosmetics and medicines. So, despite what we think, also these part of the fish are useful for us.

Moreover I learned that for people in Finland the environment is very important

## Tommaso B.

While i was watching these videos I understood even more deeply how important the Bioeconomy is because if we want a better future and also of higher quality products we have to put it into action.

Since we humans use non-renewable resources a lot, it would be advisable to waste them as little as possible and use them "to the last drop", without throwing away anything that is still usable.

In the video I saw an example of bioeconomy in Finland and it seemed to me that everything was more beautiful, healthy and natural there.



Vittoria P.

I think that nowadays the most important thing is the protection of our planet. So, as the first video shows, renewable resources can be used and turned into useful products. For example, I didn't know that from fish waste we can get bio medical products, snacks for human consumption, high fashion textiles...

The second video shows well how we can promote tourism using natural resources from the environment. For example, in Finland the wood of forests is used consciously to produce paper and also fuels.

BIOECONOMY IN OUR AREA/COUNTRY: STEP 5: Do some research about sustainable/bio-based companies or startups in your area/country


Alessia T.

Orange Fiber is a company from Rovereto that produces high quality fabrics. The raw material used comes from the agri-food industry, in particular it exploits the waste derived from the industrial production of citrus juice. Hundreds of thousands of tons of a by-product destined to be disposed of as waste becomes the raw material of a quality product made in Italy. A woman from Sicily had the idea for this project; the pilot plant was inaugurated in Sicily in 2015. The product is obtained by extracting cellulose from citrus fruits and then being transformed into yarn. The fabric obtained from this yarn is impalpable and light, similar to viscose. Or the yarn can be used together with the Como silk and cotton thus obtaining a satin and a poplin (a soft, fresh and shiny cotton fabric).

**Filati Innovativi - Orange Fiber**

Sviluppiamo filati innovativi e vitaminici dagli agrumi, creando un tessuto sostenibile e cosmetico che affianchi l'innovazione dei brand di moda


ORANGE FIBER



Mattia G.

Renner Italia is a factory which produces paints. It is in Emilia-Romagna, in Minerbio. All the paints are eco-friendly. These paints are created to respect nature. They are special because you can use them on all surfaces but they can mostly be applied to wood- These paints don't contain formaldehyde. It is a

particular material used as glue in normal paints for not having bacteria, mold or fermentations. Not only are the paints are ecologic but they also help to save energy for production and packaging . The energy employed for the production of these paints is exclusively renewable. It is hydroelectric, eolian, solar and biomass energy. This has the purpose to reduce environmental impact. Packages are made of tinplate internally coated with a sheet of high density polyethylene. This reduces the disposal of special waste.



**Pure, scopri le vernici a emissioni zero**

di Renner Italia SpA

YOUTUBE

Alice V.

This company was founded by the Korean stylist Dong Sean Lee and the Italian manager Giuliana Borzillo. There aren't many Italian companies that recycle materials, so it was hard to find one that didn't "recycle" only plastic. This company takes fruit peel and transforms it into fabric, then they use the fabric to make shoes. They mainly use grape, pineapple and apple peel. I didn't think you could create fabric from fruit peel. I think these results are really good and even if I don't really like the shoes I don't think they look bad. The company also carefully selected the packaging, which is bee-friendly and I think that's really worth and smart.

**Home**

ID.EIGHT è un marchio di moda che realizza scarpe modello Sneakers utilizzando materiali ecologici e cruelty free. Scopri la collezione!

ID.EIGHT



Fulvio R.

Today a lot of industries in Italy and in the world are starting to be bio-sustainable. I have found an industry in Sardegna called Dilatte that produces paints with the refuse of the cheese



production process and plants refuse When I discovered it I was very surprised and I could not believe it, but is real. This industry takes from the cheese industries their refuse,which is a lot, ( for 1 kg of cheese there are 8 kg of whey) that normally pollute nature a lot. In my opinion we have to buy only things that are made with natural materials and are compostable or recyclable so as not to destroy our planet and for our future.

**Milk Birck, dalla Sardegna i mattoni ecologici realizzati con il latte scaduto**

La questione del riutilizzo dei prodotti alimentari scaduti è molto sentita, nel nostro settore: sono migliaia, infatti, le tonnellate di alimenti che, ogni anno, diventano spazzatura. Per fortuna, start-up e aziende innovative stanno lavorando anche in Italia al riutilizzo di alimenti non più commestibili.

ITALIAN FOOD EXPERIENCE



# What we are going to do next:

**1. When school reopens we will have a class exhibit about our research and share the content of our work with our classmates, teachers and families.**



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