

4º
CONCURSO

PROGRAMA DE SENSIBILIZACIÓN EDUCATIVA

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#PLASTICFREE



UNIT 3

THE CIRCULAR ECONOMY

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1. THE CIRCULAR ECONOMY

The circular economy is an economic system that seeks to **reduce waste, make better use of finite resources and care for the environment.**

To make this change we must rethink the way we manufacture products, by minimising their environmental impact during manufacturing and logistics, distribution and storage.

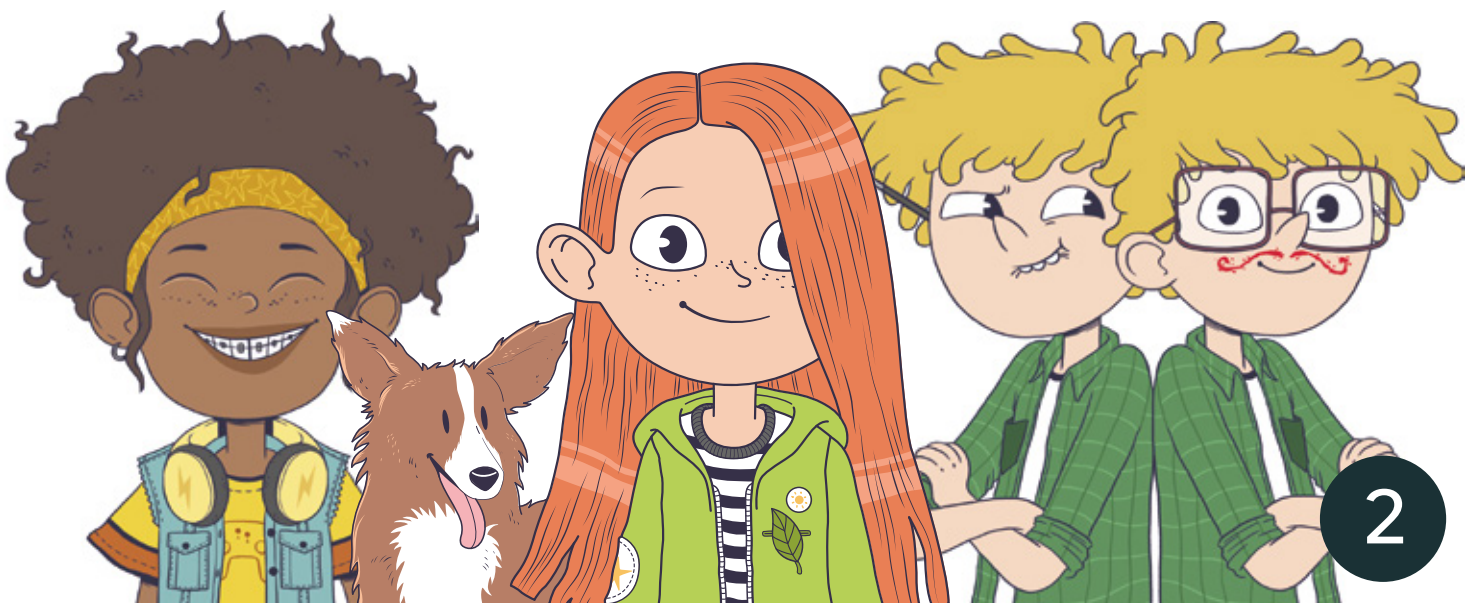
The new challenge leaving behind a lineal economy model dependent on materials extraction, transformation, production, consumption and elimination processes that ignores consider concepts like sustainability and the environmental footprint.



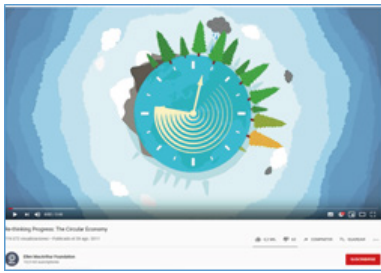
The circular economy seeks to refocus all phases of **product development, repairs, recycling, reuse and remanufacturing.**

The role of consumers is a pivotal one, because as our attitude changes, so will the way we look at consumption, prompting us to **consume less and better.**

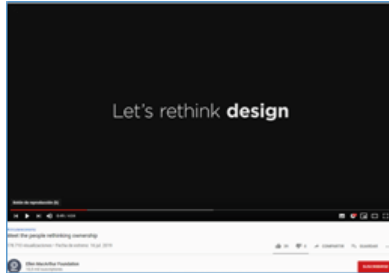
The changes in attitude could materialise in anything from reducing our use of plastic bags and replacing them with cloth and raffia bags, to thinking giving new purposes to objects or products before we discard them, assigning new functions and changing the way we thinking about domestic waste recycling.



To learn more, watch these videos or show them to your class:



<https://www.youtube.com/watch?v=zCRKvDyyHml>



https://www.youtube.com/watch?v=lbbQaBM846Q&list=PLX-T_ozykG-VakV38sna_tXQDvbyrgF-4vw



<https://www.youtube.com/watch?v=76RnsC9JSc4>



https://www.youtube.com/watch?v=Cd_isKtGaf8



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The case of returnable bottles.

Throughout the second half of the 20th century, drinks were sold in glass bottles, which were returned to the store where they had been bought once they were empty. In exchange, consumers received a small sum of money and drinks manufacturers recovered the bottles for reuse.

This shielded the environment from pollution and huge amounts of energy were saved in the manufacturing, production and logistical phases. Raw materials and energy were saved and fewer materials ended up in landfills, producing less contamination, burning less fossil fuel for production and transport.



2. ENVIRONMENTAL IMPACT AND FOOTPRINT

With its overall approach, the **circular economy** considers all products development phases. From product creation to elimination, as well as resources, residue, the energy needed.... all seeking **to be more sparing and efficient** to optimise the entire process.



“The European Union says that more than 80% of a product’s environmental impact is determined during the design and development phase”.

GREEN PAPER ON INTEGRATED PRODUCT POLICY

<https://eur-lex.europa.eu/legal-content/ES/TXT/?uri=CELEX%3A52001DC0068>



So, products can be designed to be truly sustainable based on a real analysis of all the different phases involved, **with a positive impact on the environment**. Doing this requires input from all agents included in their development: suppliers, manufacturers and logistics operators, retailers, consumers and the government.

This implementation means changing practical aspects of **sustainable development**, including the following **considerations**.

ECODESIGN FACTORS

MINIMAL USE OF MATERIAL

Reduce the amount of material used to manufacture a product to a minimum.

OPTIMAL CHOICE OF MATERIALS

Select the most sustainable, innovative and least contaminating options.

DESIGN FOR EASE OF DISASSEMBLY

Design modular parts of the product to facilitate recycling, or make it possible to replace auxiliary parts to lengthen the useful life of the product.

PRODUCT REUSE OR RECYCLING AT THE END OF ITS USEFUL LIFE

Like the previous point, designing modular products can assist with selective recycling.

MAXIMUM ENERGY EFFICIENCY

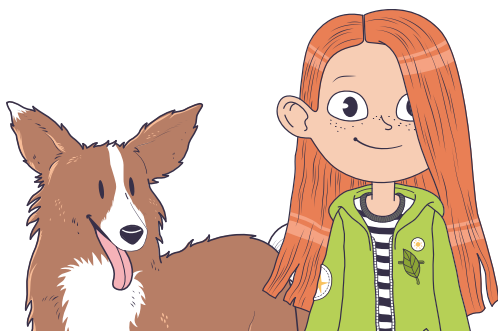
Optimise energy efficiency during all product phases.

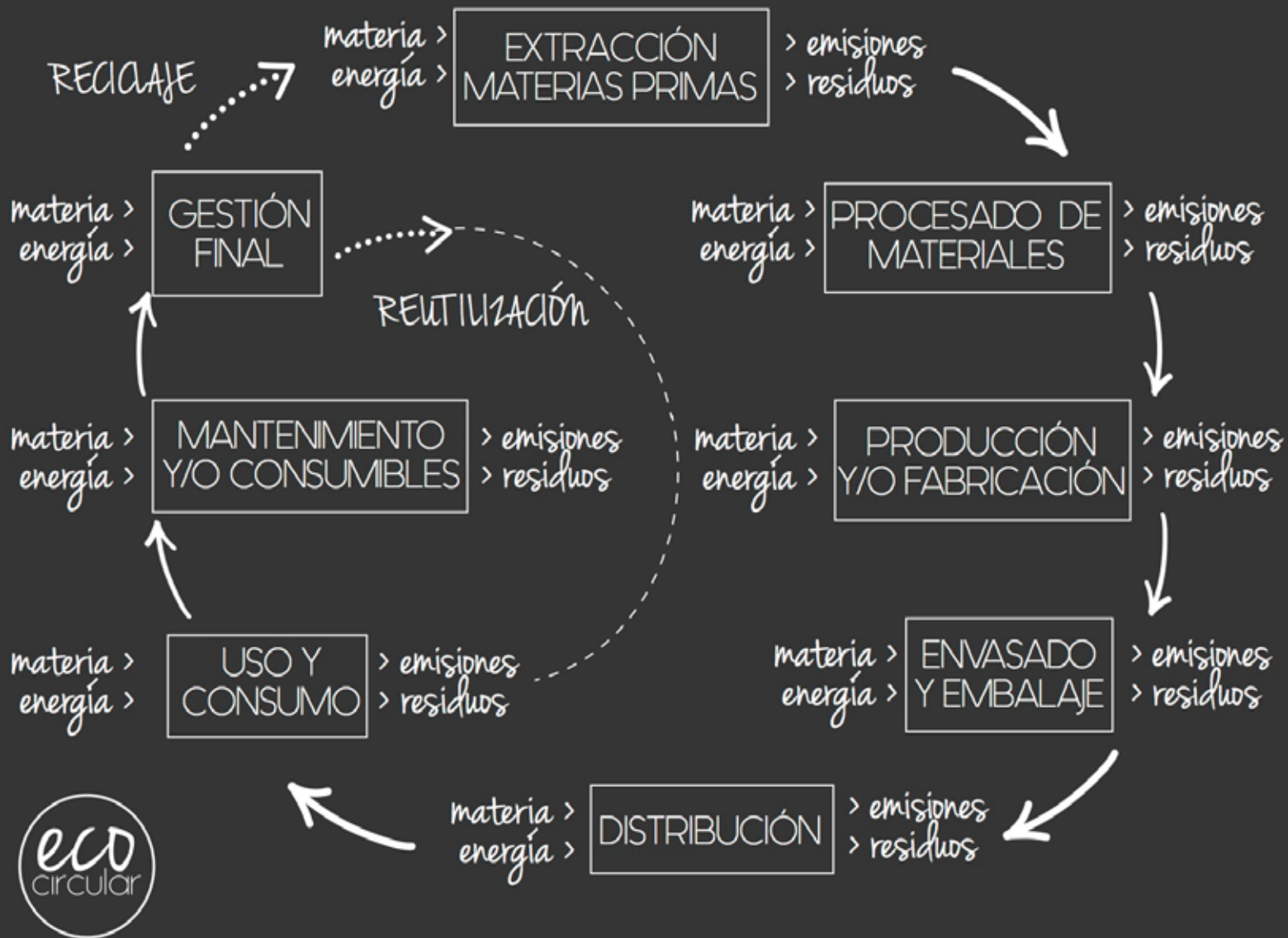
SAFE, POLLUTANT-FREE MANUFACTURING

Eliminate dangerous and contaminating waste produced during the product development phase in a sustainable manner.

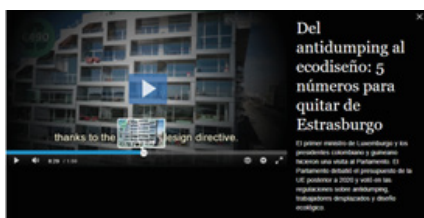
USE SUSTAINABLE TECHNOLOGIES

Use innovative, sustainable technologies to improve and optimise technical aspects during the different phases of product development.

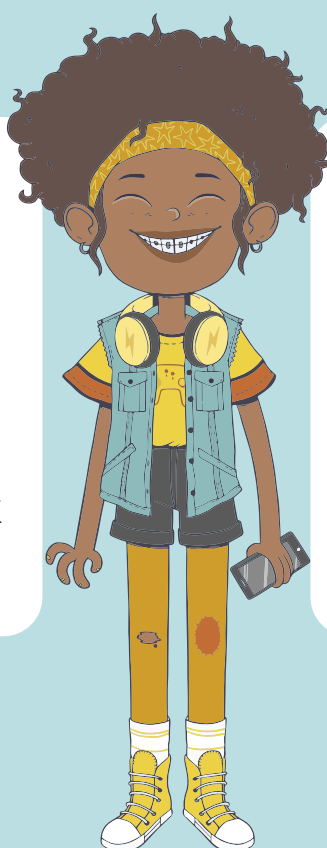




Watch these videos to learn more about the efforts being made by the European Union:



https://multimedia.europarl.europa.eu/en/search?q=economia+circular&sn=true&st=EPV_REPLA Y-EPV_VIDEO_FOOTAGE-EPV_EDITED_VIDEOS-EPV_PHOTO-EPV_AUDIO&ut=&lg=es_ES&at=1



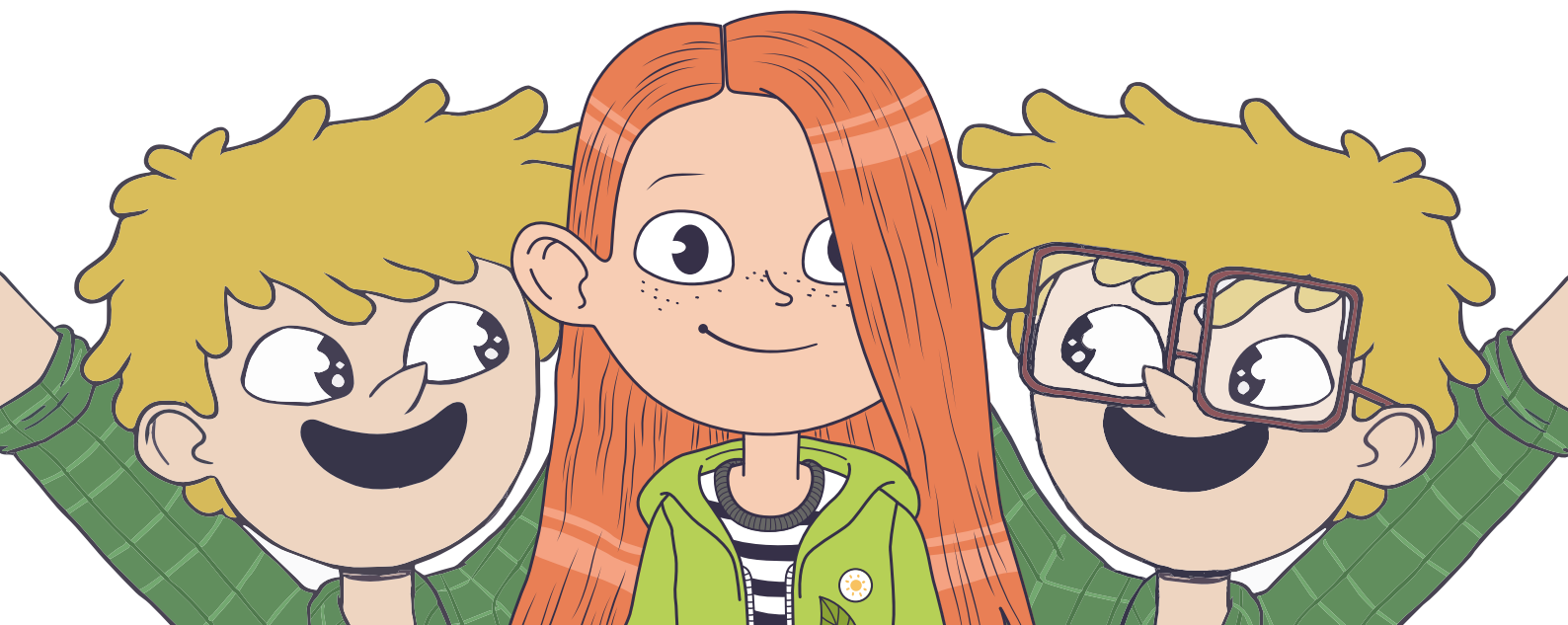
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ANALYTICAL DYNAMIC

During the product prototype project, analyse:

When your students are thinking about the product, ask them to analyse other factors by asking the following questions:



- How much do the raw materials cost?
- Can the material be reused to minimise production costs?
- Can I reuse materials classified as waste to give them new life?
- Which transformation and manipulation processes are harmful or beneficial to the environment?
- How much energy is needed?
- Are there other materials available that cost the same but which are easier to recycle?
- What are the alternatives in today's market?

3. CARACTERÍSTICAS DE UN PRODUCTO.

Products are tangible goods whose characteristics make them suitable for sale in the market

Products have attributes that satisfy consumer needs and which fulfil functions and utilities.

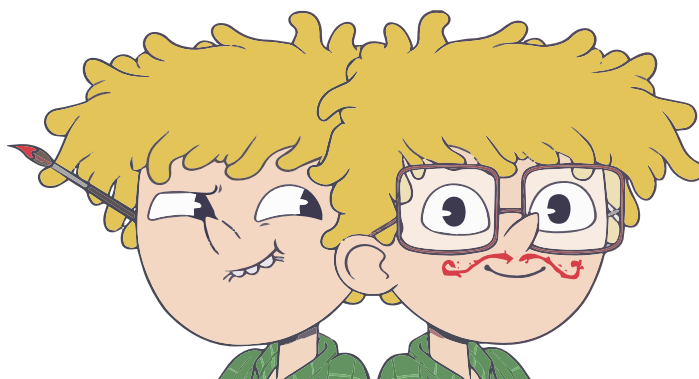
These attributes are **quality, homogeneity, materials and the packaging** or container.

QUALITY	This feature guarantees and defines product effectiveness and durability. The physical properties and materials with which is the product made, and the features that make it functional and useful.
UNIFORMITY	The uniformity of the product guarantees mass production and viability.
MATERIALS	These are components that give products their physical characteristics. We distinguish between the raw material with which is the product made and those used for assembly, which are which are called auxiliary or secondary materials.
PACKAGING AND CONTAINERS	These are the items used to wrap and protect, facilitate transport, use of the product or store a product. Packaging also contains product information and is used as a claim, by attracting consumers' attention.

During the product prototype project, analyse

These are the basic technical aspects to consider when “thinking up” the product you are going to create.

Considering that when you follow the step of the project method provided in Teaching Unit 2 “The creative process applied to the project”.



4. WEBGRAPHY

<https://www.ellenmacarthurfoundation.org/circular-economy/what-is-the-circular-economy>

<http://www.plastico.com/temas/Reciclaje-y-Sostenibilidad>

<http://www.plastico.com/temas/El-diseno-sostenible-en-ingenieria+3061431>

https://economiacircular.org/wp/?page_id=62

<https://eco-circular.com/2016/07/04/el-ecodiseno-un-fator-clave-en-una-economia-circular/>

