

The Rediscovery Centre:

Sustainability and Sustainable Design

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19th Jan 2019

STEAM

IN JUNIOR CYCLE



An tSraith Shóisearach do Mhúinteoirí
JuniorCYCLE
for teachers

Workshop Overview



- ◆ What is Sustainability?
- ◆ Sustainable Development
- ◆ Natural Resource Use
- ◆ Models for the Economy
- ◆ Principles of Sustainable design
- ◆ The Rediscovery Centre and Sustainability
- ◆ Tour of the Centre
- ◆ Sustainability Challenge
- ◆ Teacher Reflection

INTRODUCTION TO SUSTAINABILITY



What is Sustainability?

“Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs”
(Brundtland Report, 1987)

3 pillars of sustainability:

- ◆ economic development
- ◆ social development
- ◆ environmental protection

Discussion: Triple bottom line



Importance of Sustainability



Discussion: Addressing societal challenges

- ◆ Air pollution is a significant threat to public health, causing an estimated 7 million deaths a year.
- ◆ Worldwide, 11% of the world's population (770 million people) live in extreme poverty and struggle to fulfil basic human needs.
- ◆ 3 in 10 people globally lack access to safe clean drinking water.
- ◆ Each year about 1/3 of all food produced ends up as food waste, rotting in the bins of consumers, retailers or spoiling during harvest and transportation
- ◆ Decent work and sustainable industry are the core driver in eradicating poverty, advancing sustainable development and improvement in the standard of living for many worldwide.

(United Nations 2011)

Teachers Role in Sustainability



The youth of today are the people who will use and create the products and services of the future.

Sustainable Development Goals

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 **SUSTAINABLE DEVELOPMENT GOALS**



Group Activity:

In groups, discuss the question ‘How are Wearables linked to the Sustainable Development Goals?’

- ◆ E.g. to the production or consumption of clothing / textiles

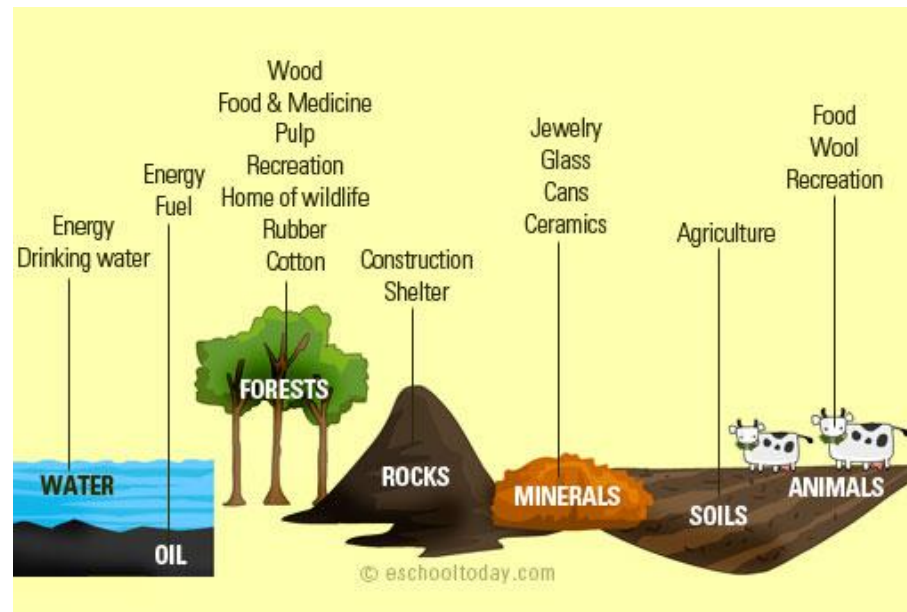
A focus on Goal 12



Natural Resources

What are natural resources?

- ◆ raw materials (e.g. minerals, plants and animals)
- ◆ environmental media (e.g. air, water and soil)
- ◆ energy sources (e.g. wind, geothermal, tides and sun)
- ◆ space (land area)



Activity: Natural Reuse Use

List all of the natural resources you have used so far today.

- ◆ E.g. if you read a newspaper this morning, the natural resources used include; wood, water, energy, soil (to grow the trees), and minerals, plant oils and petroleum for printing inks.

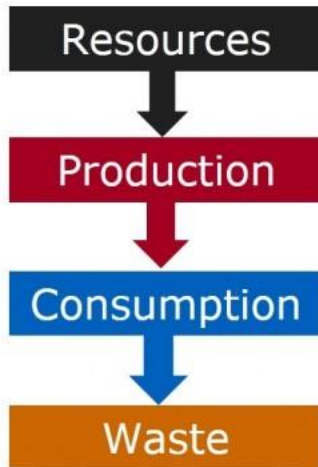
Remember to include wearables

Models for our Economy



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Linear economy



Chain economy



Circular economy



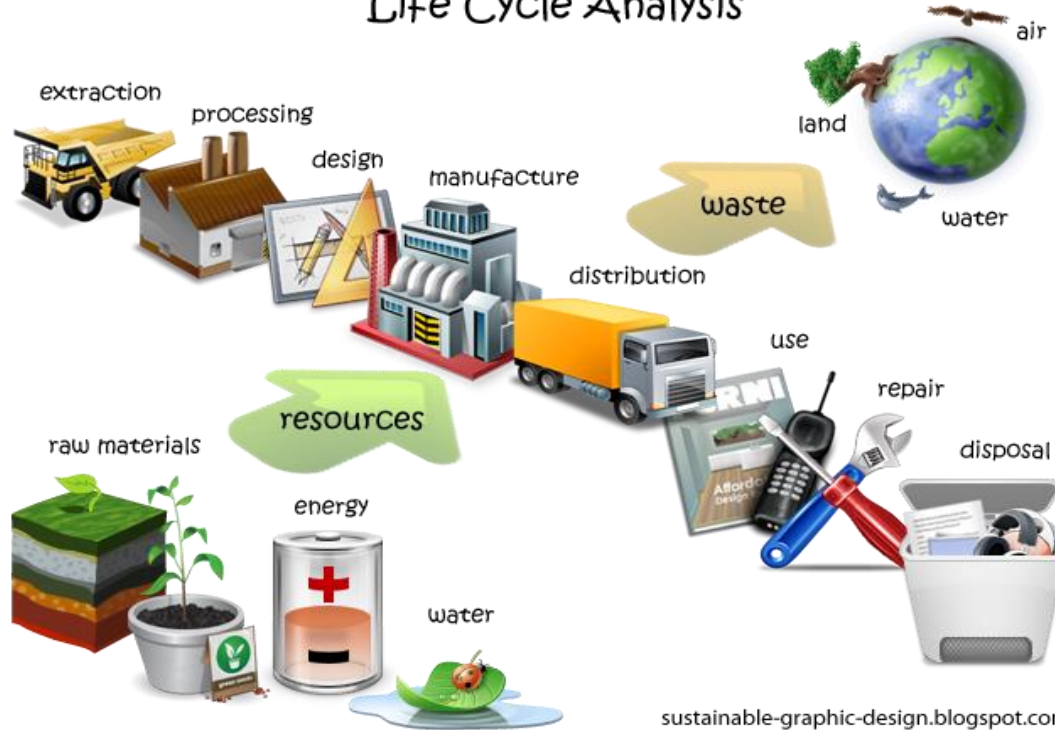
Linear Economy Model



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Cradle to Grave

Life Cycle Analysis



sustainable-graphic-design.blogspot.com

Linear Economy Model



Linear Economy Facts

- ◆ In Ireland, 2,763,166 tonnes of municipal waste is generated each year. Consumption of products and services is the key driver for waste generation, at household, commercial and industrial level (EPA, 2018).
- ◆ In Ireland, we produce an estimated 225,000 tonnes of textile waste annually (Redress, 2017)
- ◆ Worldwide, clothing production has doubled in the last 15 years, but clothing utilisation has drastically decreased (Ellen McArthur Foundation, 2018).
- ◆ 98 million tonnes of non-renewable resources are used annually across the textiles industry as a whole, producing greenhouse gas (GHG) emissions of 1.2 billion tonnes per year (Ellen McArthur Foundation, 2018).

Ecological Overshoot



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EARTH
OVERSHOOT
DAY



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[NEWSROOM](#)

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AUGUST 1

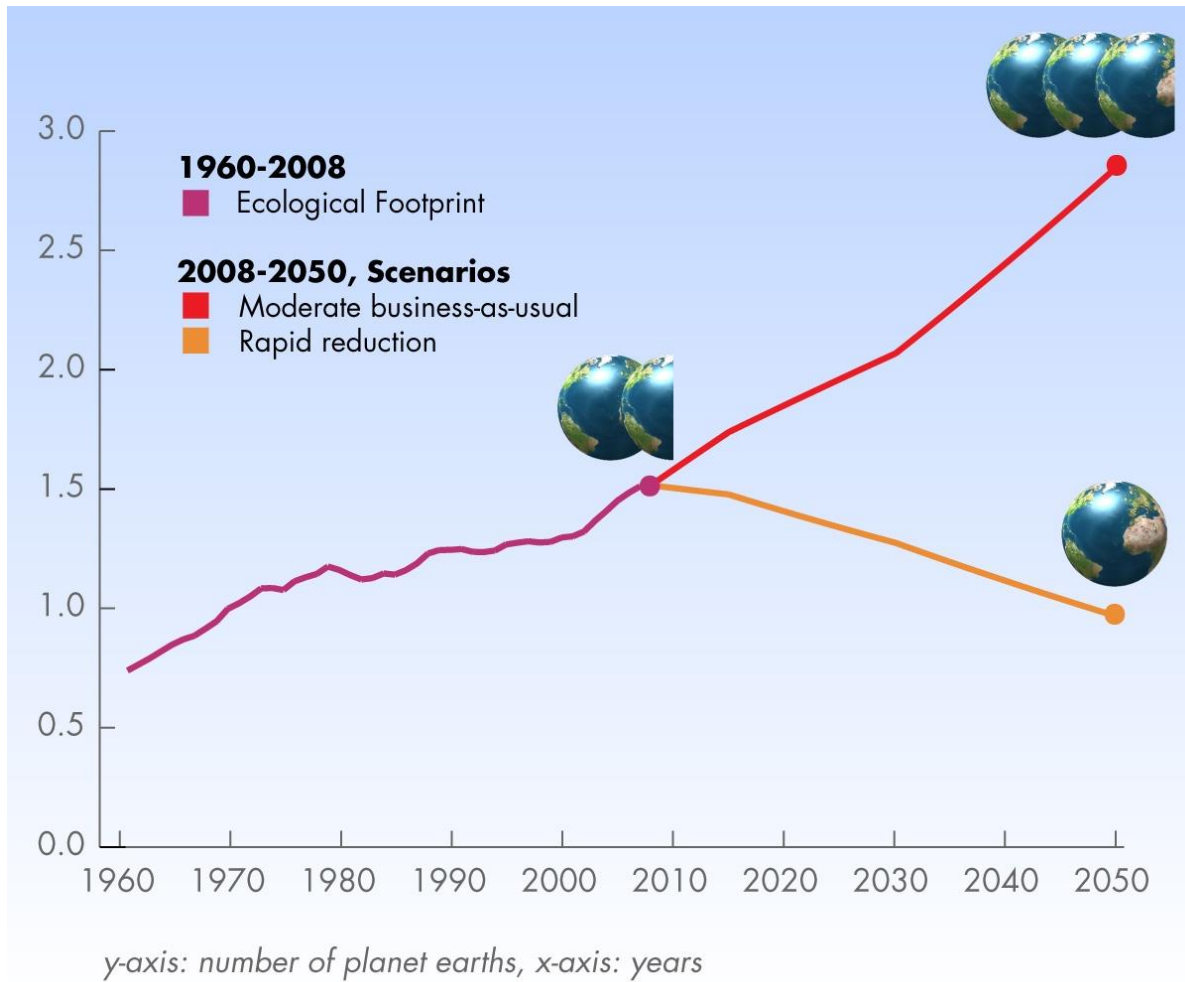
Earth Overshoot Day 2018



REDISCOVERY
CENTRE



Ecological Overshoot



Circular Economy Model



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What is Sustainable Design

- ◆ Sustainable design is the philosophy of designing physical objects, the built environment, and services to comply with the principles of social, economic, and ecological sustainability
- ◆ (Birkeland 2002)



Group Word Cloud Activity: Principles of Sustainable Design

- ◆ In your group, discuss the question “What are the principles of Sustainable Design?”
- ◆ Using your phones, go to weblink:
PollEv.com/rediscoveryc259
- ◆ Each group can answer as many times as you like

Principles of sustainable design

- ◆ Low-impact materials
- ◆ Energy efficiency
- ◆ Quality and durability
- ◆ Design for reuse and recycling
- ◆ Low Carbon Footprint
- ◆ Function and usability
- ◆ Positive societal impacts
- ◆ Service substitution
- ◆ Renewable resources
- ◆ Design and manufacture standards

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THE LIBRARY

OF THINGS
Dublin

Examples of sustainable design



Can you give any example of a product that was produced using principles of sustainable design?

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Sustainability in Action



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Mission: a creative space connecting people, ideas and resources in a common purpose of sustainability.

Aims:

- ◆ To divert waste from landfill
- ◆ Provide community employment & training
- ◆ Inspire sustainable living



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- Rediscover Furniture
- Rediscover Fashion
- Rediscover Paint
- Rediscover Cycling
- Research
- Education
- The WISER Project



The Rediscovery Centre



- ◆ Sustainable Design and Circular Economy: Extends the life cycle of products by reusing / repairing them.
- ◆ If an item can't be repaired then it is broken into its component parts and these are reused.
- ◆ Uses “waste” products from the workshops
 - ◆ textile off-cuts are used as stuffing in foot stools and door stops
 - ◆ waste office paper is used in school workshops



Tour of Centre

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Activity

Sustainability Team Challenge



Teacher reflection



- ◆ How can the concept of sustainability be brought into your Junior Cycle subject?
- ◆ What are the cross-curricular opportunities of sustainability and sustainable design?
- ◆ What can you do in the school / classroom to promote Responsible Consumption and Production?

Feedback Session



In your groups take five minutes to discuss today's workshop and then share your feedback with the rest of the class.

- ◆ Do you think you will do anything different after partaking in this workshop?
- ◆ Did today's workshop achieve its aims?

Thank you!



For further information:

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