

environmental education

Tenerife, 24-29th nov 2025

... learning and acting for
better future

welcome





WEWATER

environmental education

arula@wewater.es

environmental education



Is about:

- + How to get students motivated and engaged with this topic
- + Resources that inspire us to integrate this transformative approach
- + Tips and games for in-class conversations and practises
- + One more step as **SUSTAINABILITY & REGENERATIVE AGENTS**

... sharing the impact while **keeping it positive** and **future focused**



COLLABORATIVE EDUCATION

inspired in:

Systems thinking

Donella Meadows, 1972.

Permaculture

Fukuoka, Mollison, Holgrem..., 1978.

Circular economy. The Ellen MacArthur foundation, 2010.

Groups facilitation. liface, 2025.

Designing regenerative cultures

Daniel C. Wahl, 2006.

Theater of the oppressed

Augusto Boal 1960 & Imagination.

Nonviolent Communication

Marshall Rosenberg, 1984.

environmental education

... **learning and acting for better future**



Summary:

We are nature

Is it all about connections..?

Systems thinking & Sustainability Natural Soap Workshop

A "close the loop" workshop to transform used oil into a natural soap

Excursion to Permaculture Project: Finca El Encuentro

Outdoor class in Agua García Forest

Evaluation + Diploma + Next steps

environmental education

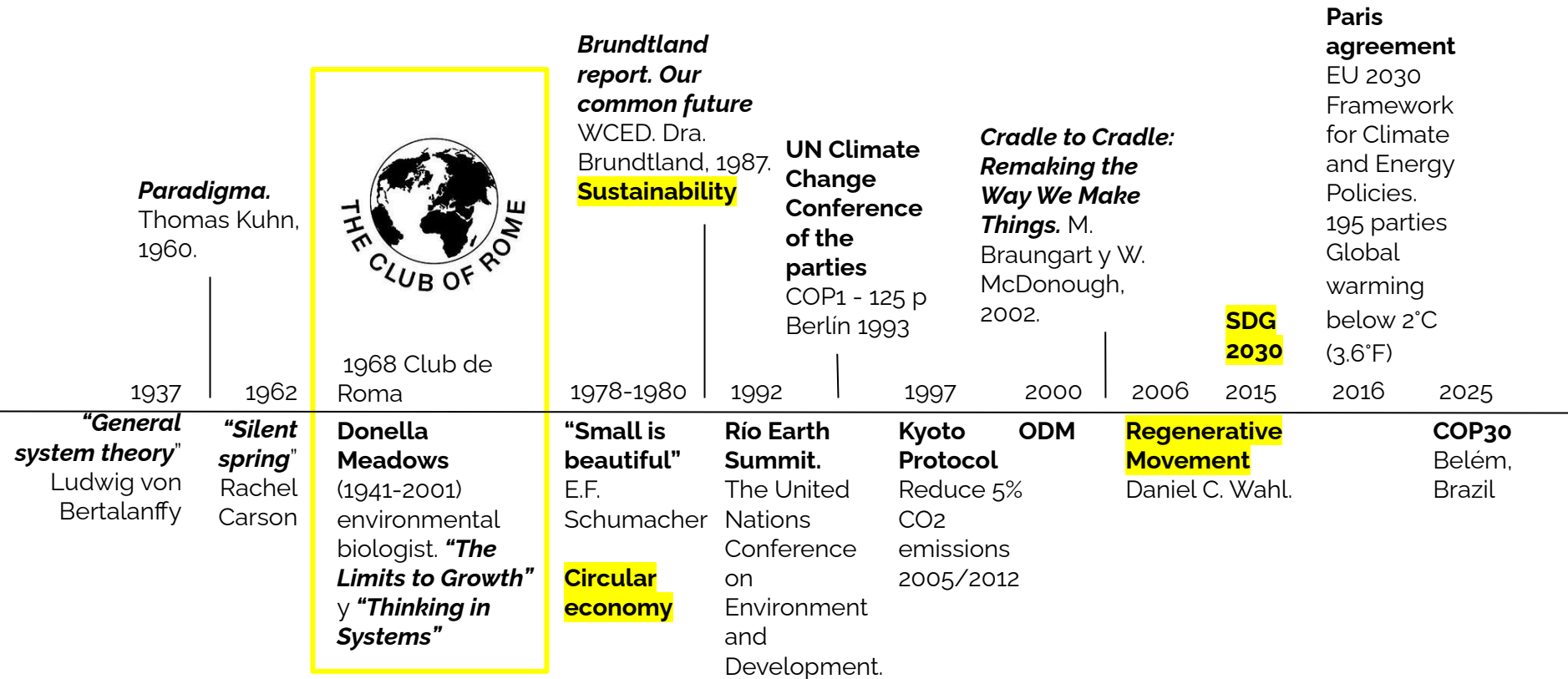
... **learning and acting for
better future**



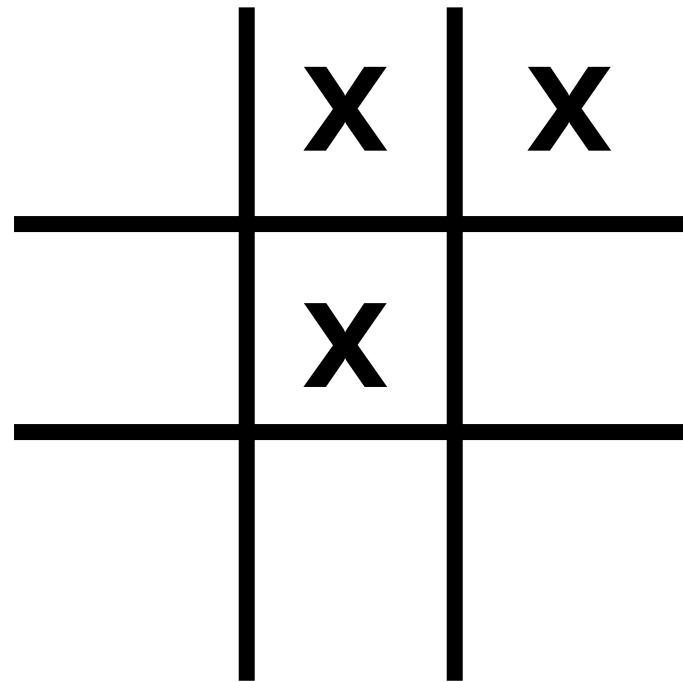
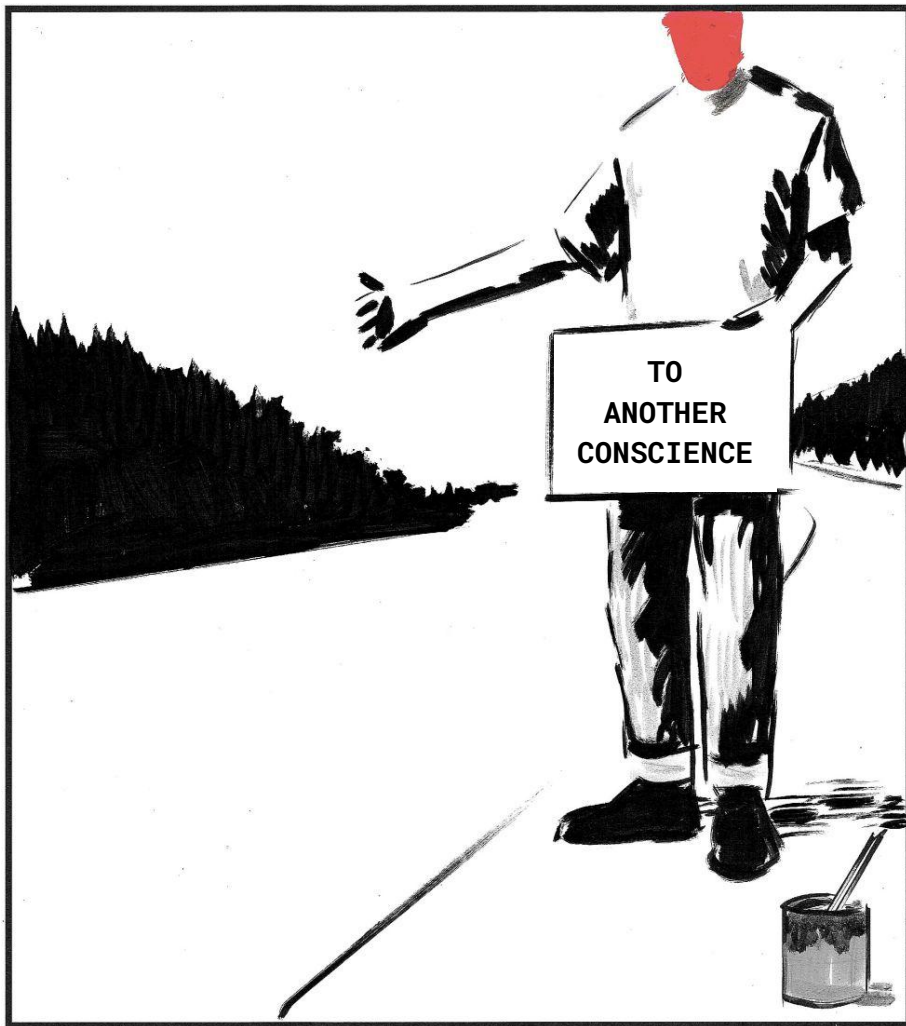
where do we come from?

where are we going?

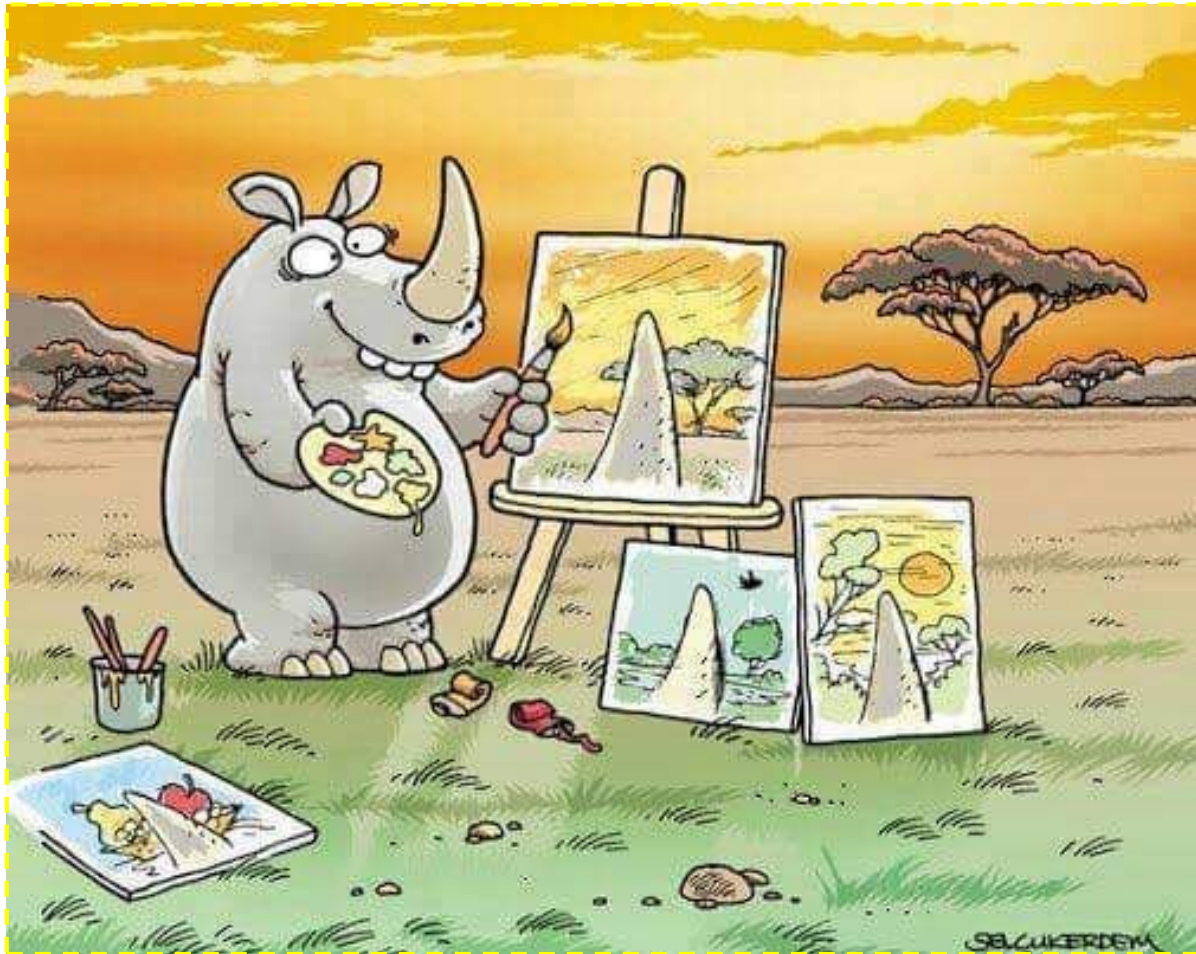
where do we want to go?



where do we come from?

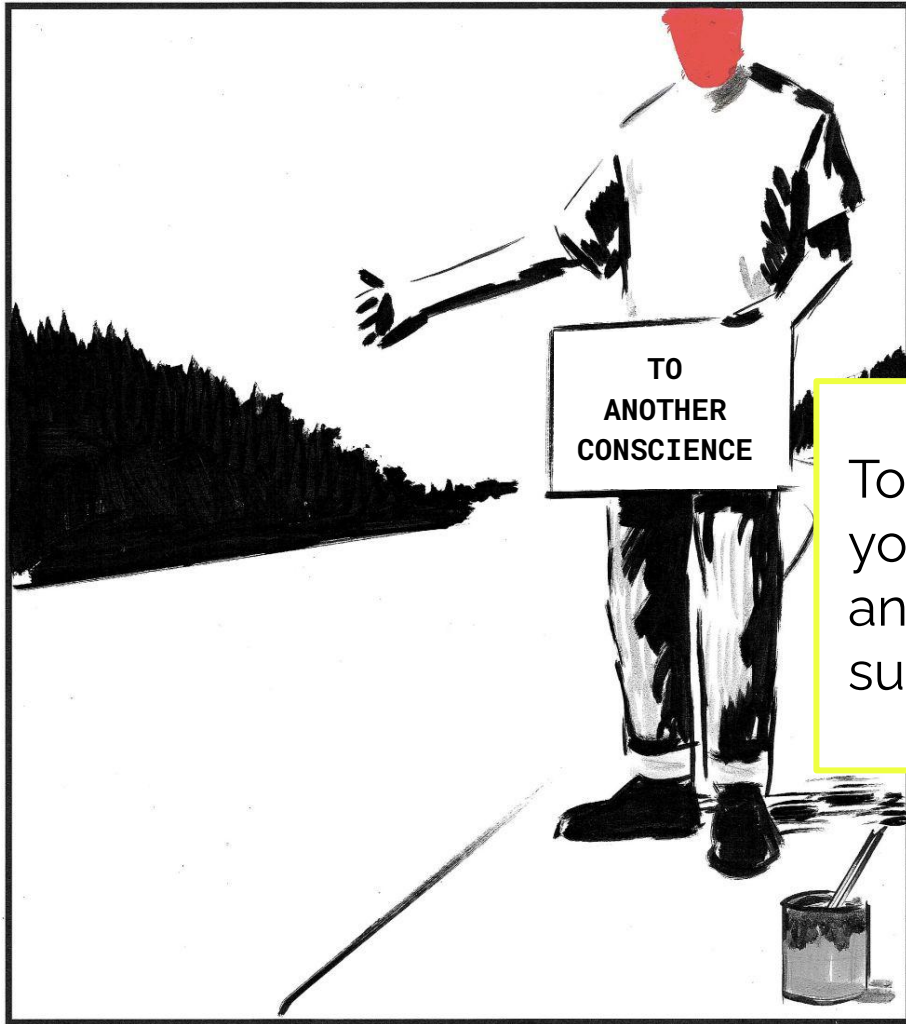


the model matters



We don't see things
as they are, we see
things as we are

Anais Nin



my goal

To share tools & concepts with you, so you can make your school environment and your educational system a more sustainable and regenerative one

the model matters

where are we going?

SCHOOL'S PRESENTATION

Share with the group your personal goal.

And, what about your school?

Mention **challenges and solutions related to environmental education** currently happening in your school.





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Personal projects & Team work

environmental education

... **learning and acting for
better future**

what do we understand by environmental education?

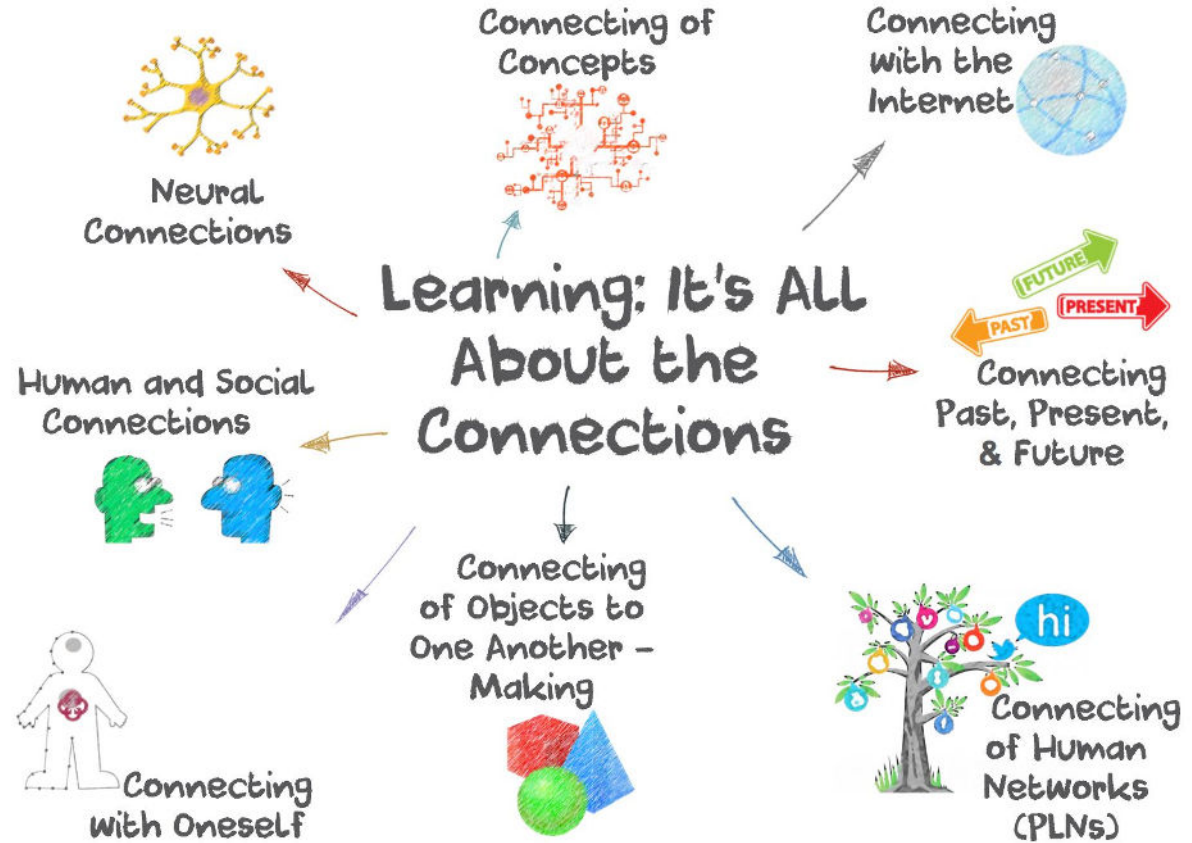


Environmental education is a process that allows individuals **to explore** environmental issues, **engage in problem solving**, and **take action to improve the environment**.

As a result, individuals **develop a deeper understanding of them** and have skills to make informed and **responsible decisions**.

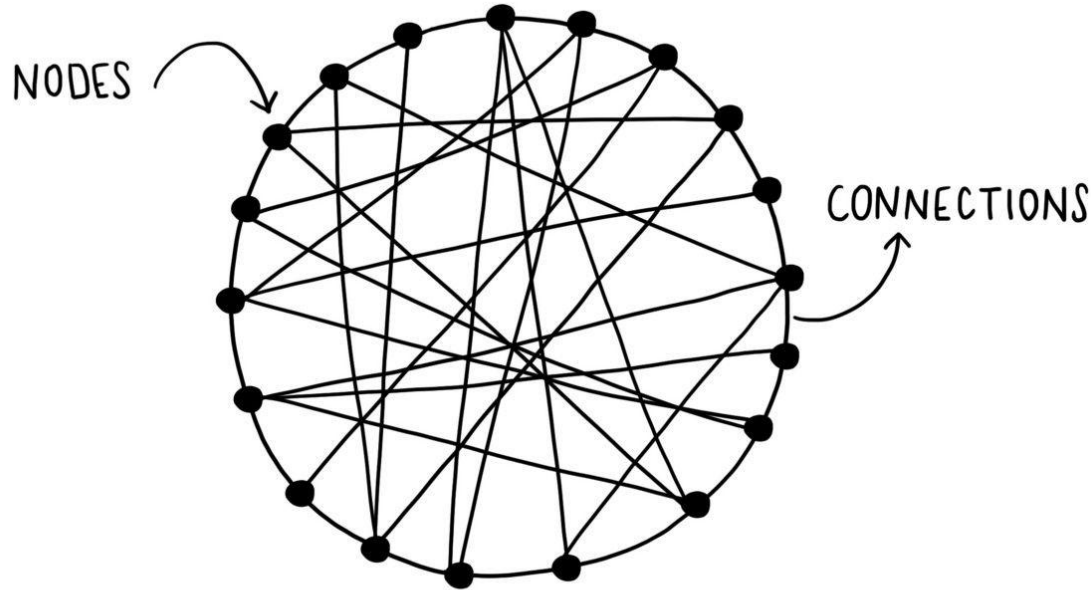
environmental education

how do we make this change of direction?



environmental education

Systems Thinking



A system is a set of related components that work together in a particular environment to perform whatever functions are required to achieve the system's objective.

It is composed of:

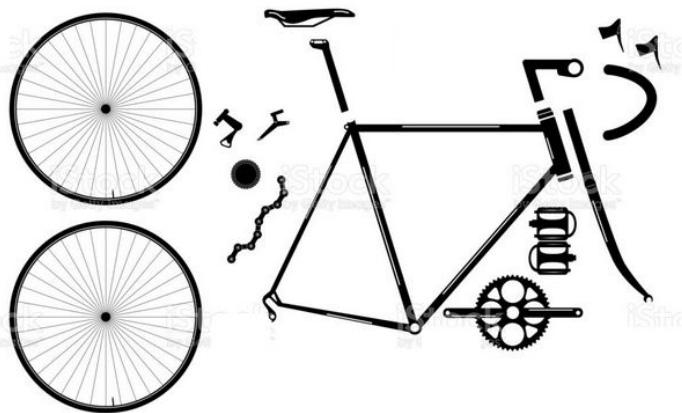
- Elements
- Interconnections
- A collective purpose

D. Meadows

now it is a bicycle

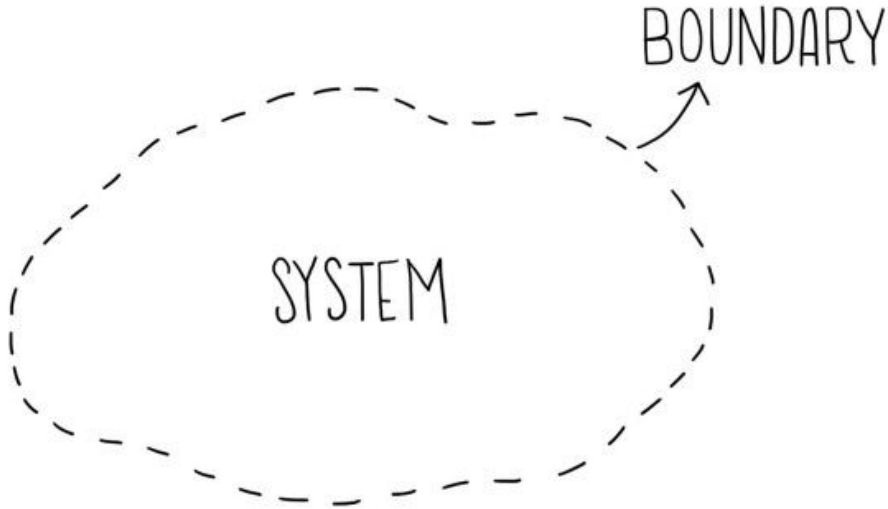
from a set to

a system



Systems Thinking

is everything a system?



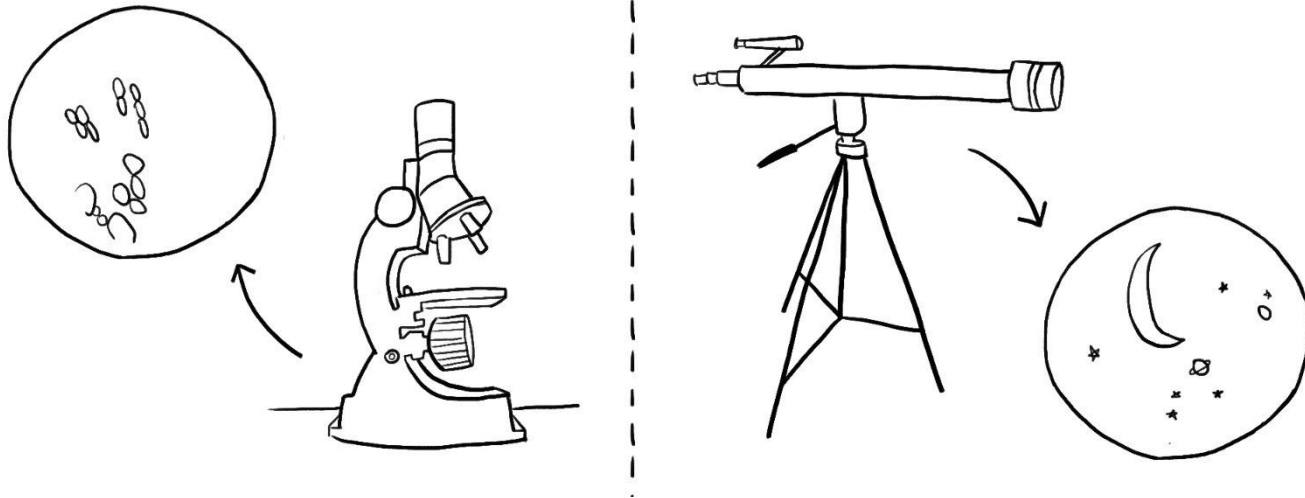
There are no separate systems,
the world is a continuum.

Where to draw a boundary around
a system depends on the purpose
of the discussion.

D. Meadows

Systems Thinking

SYSTEMS THINKING SCALES



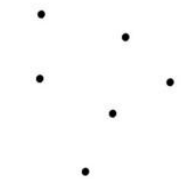
The **process of transformation** into a system **emerges** when interaction among elements changes the properties of the set.

D. Meadows

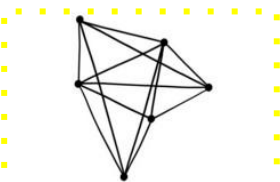
tools

of a system thinker

system properties



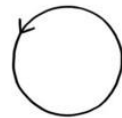
DISCONNECTION



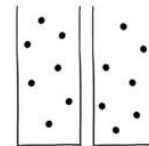
INTERCONNECTEDNESS



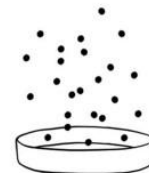
LINEAR



CIRCULAR



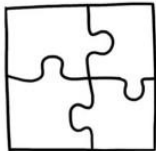
SILOS



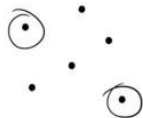
EMERGENCE



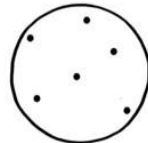
PARTS



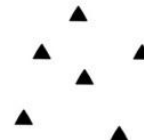
WHOLES



ANALYSIS



SYNTHESIS

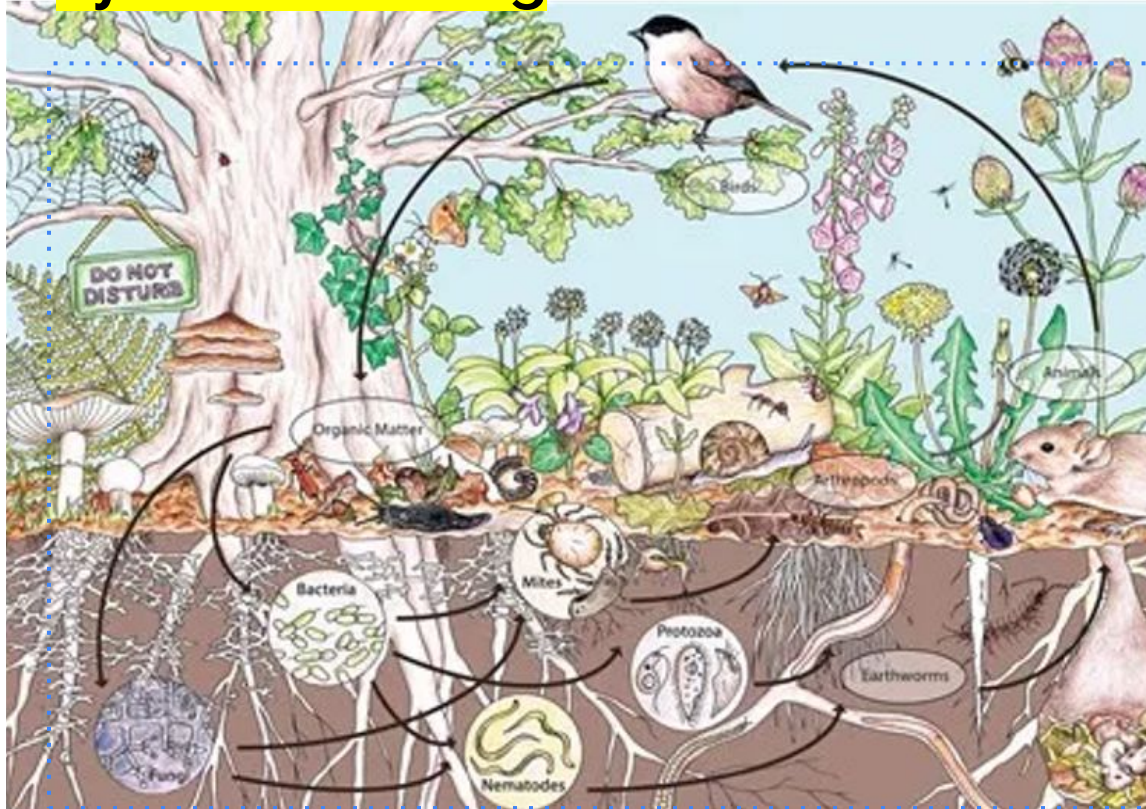


ISOLATION



RELATIONSHIPS

Systems Thinking



Nature is us and our home

system's properties

Resilience - diversity - complexity

Self-organization - emergence

Hierarchy - order - nested systems

A system is more than the sum of its parts.



**Humanity has not woven
the net of life.
We are just a thread of it.
What we do to the net we
do to ourselves.
All things are linked to
each other. Everything is
connected.**

chief Seattle

<https://www.youtube.com/watch?v=5gWGP34-4tY>

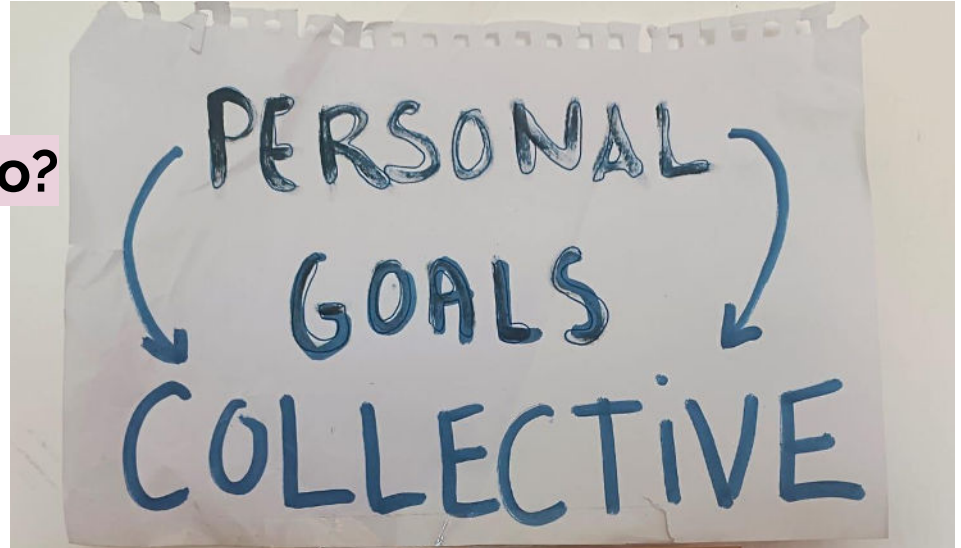


Systems Thinking

how do we make this
change of direction?

where do we want to go?

from set to a system



how this change of direction?



tools

of a system thinker

Nested systems

See the reality as a network
of relationships

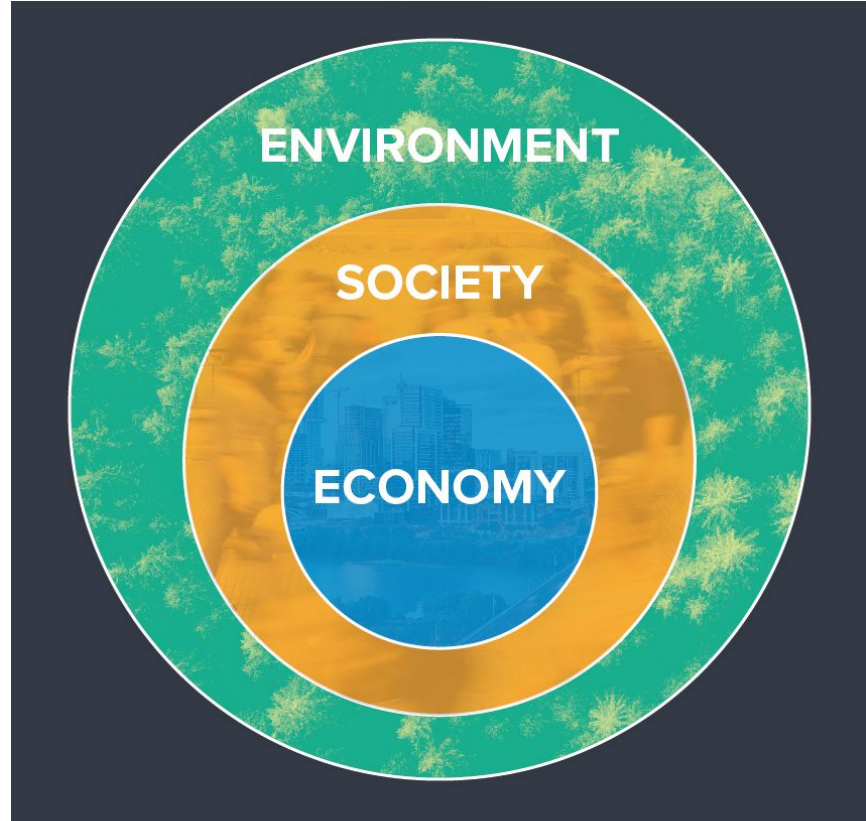
what is **sustainability** about?

Sustainability is about meeting the needs of current generations without negatively affecting the ability of future generations to meet their own needs.

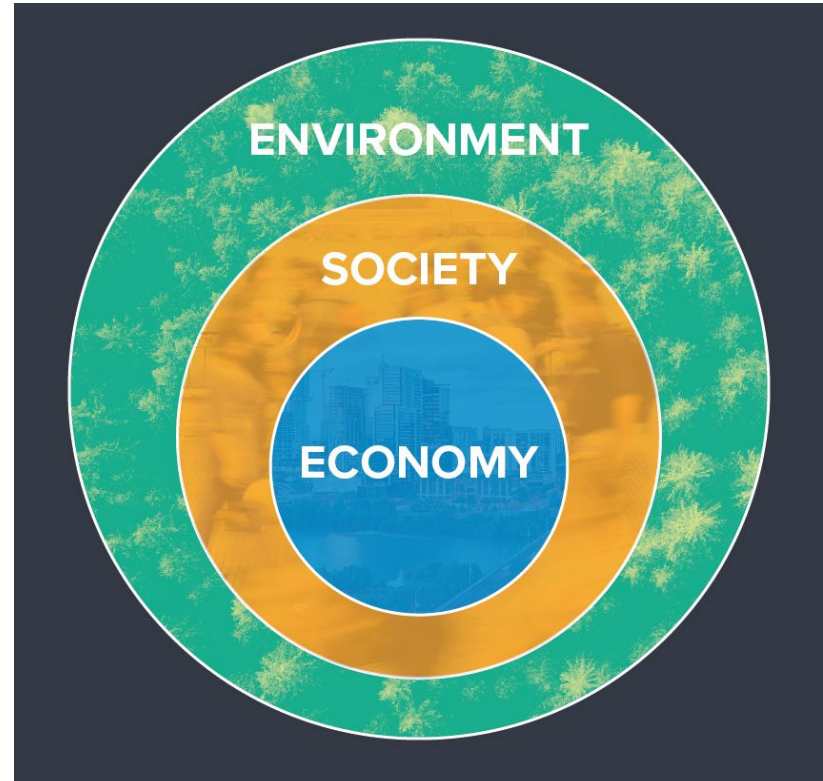


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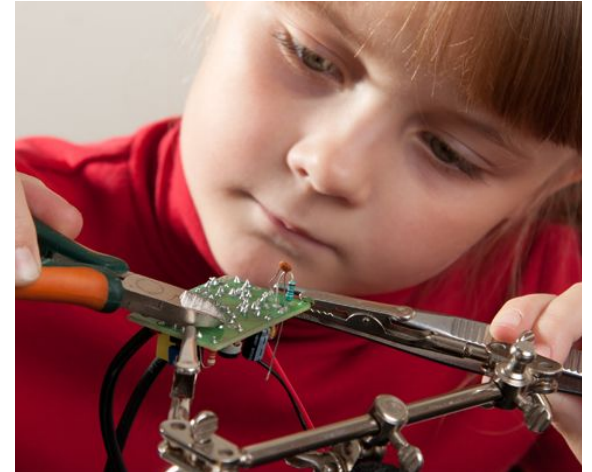
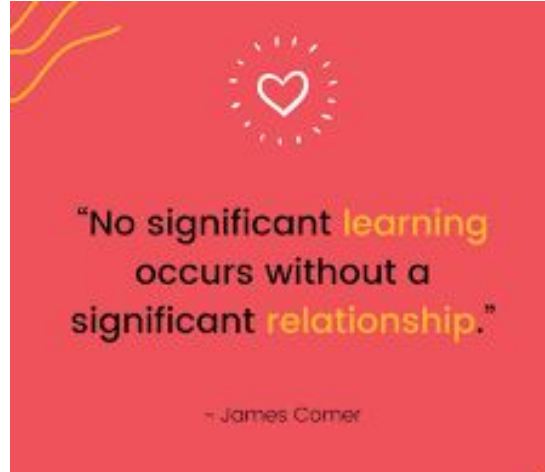
what is sustainability about?



environmental education

The 3H

This methodology is based on 3 principles:



Head: educational resources
(materials, humans, animals,
places, etc.)

Heart: significant learning
(learning is an unforgettable
experience)

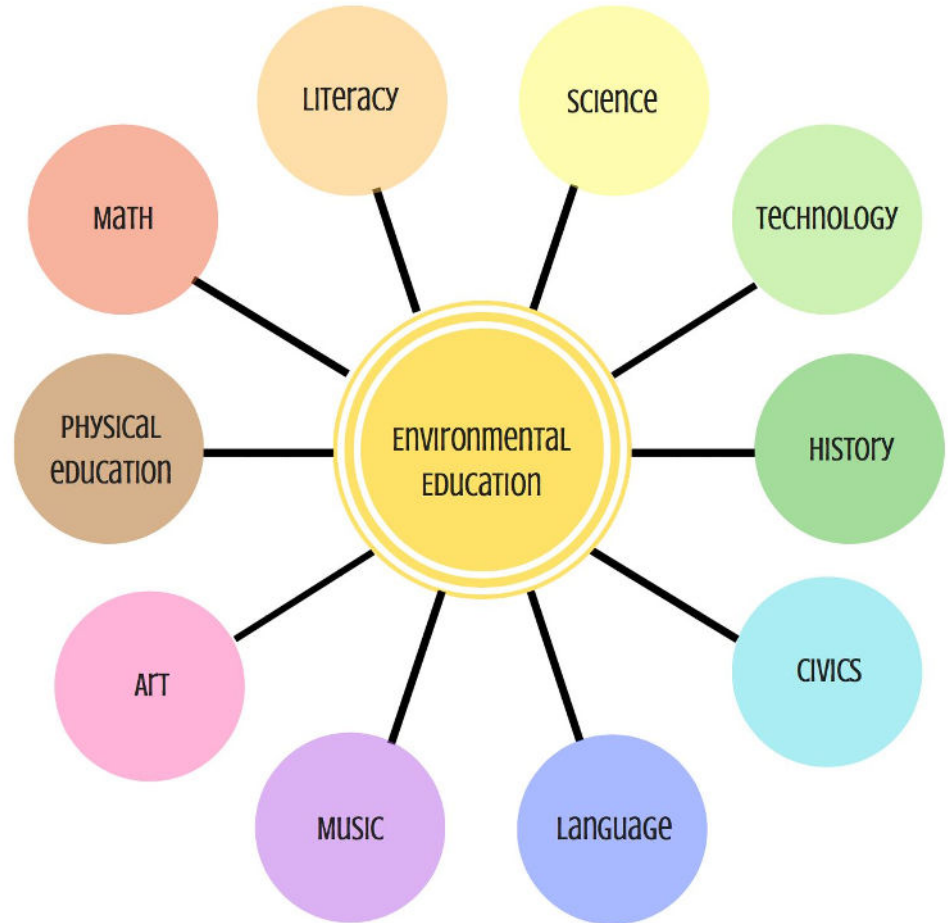
Hands: learn by doing (letting
go so that learning is
complete).

HEAD HEART HANDS

How can you include the 3H in your subjects?

Think, at least, 3 ways to do it ;)

environmental education
... **learning and acting for better future**



Agriculture

Permaculture



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***Systems thinking & Sustainability
Natural Soap Workshop***

A "close the loop" workshop to transform used oil into a natural soap

***Excursion to Permaculture Project:
Finca El Encuentro***

Outdoor class in Agua García Forest

Evaluation + Diploma + Next steps

environmental education

... **learning and acting for
better future**

permaculture



Masanobu Fukuoka - One straw revolution (1975)

permaculture

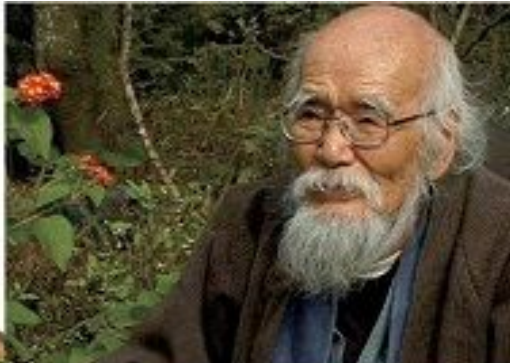
nendo dango
(seed clay balls)

No dig

**Do not use
fertilizers or
fertilizers**

**There are no
weeds**

No pruning



1. DESMOLVER
TUS GREENHOMES



2. ESPERAR
LOS SEMILLAS



3. ESPERAR LOS
PRIMOS LLUVIAS



4. CRECER CON
BROTAN...



...LOS ARBOLES



permaculture



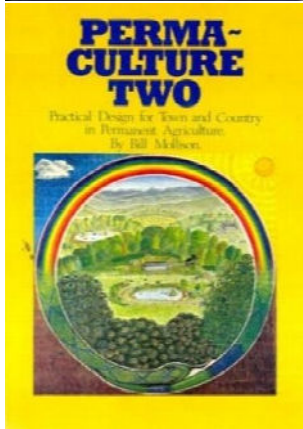
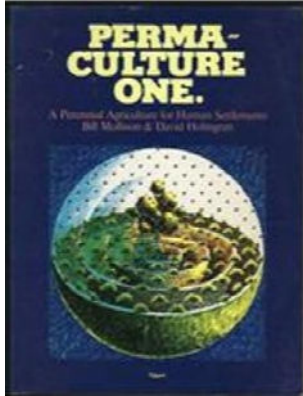
Loes. China

permaculture

Great Green Wall.
8,000 km
Mauritania,
Senegal, Sudan,
Eritrea and
Ethiopia.



permaculture



PERMACULTURE ETHICS



Founders:
Bill Mollison & David Holmgren

permaculture

ETHICS

ethics

care of the Earth

leave in peace & regenerate

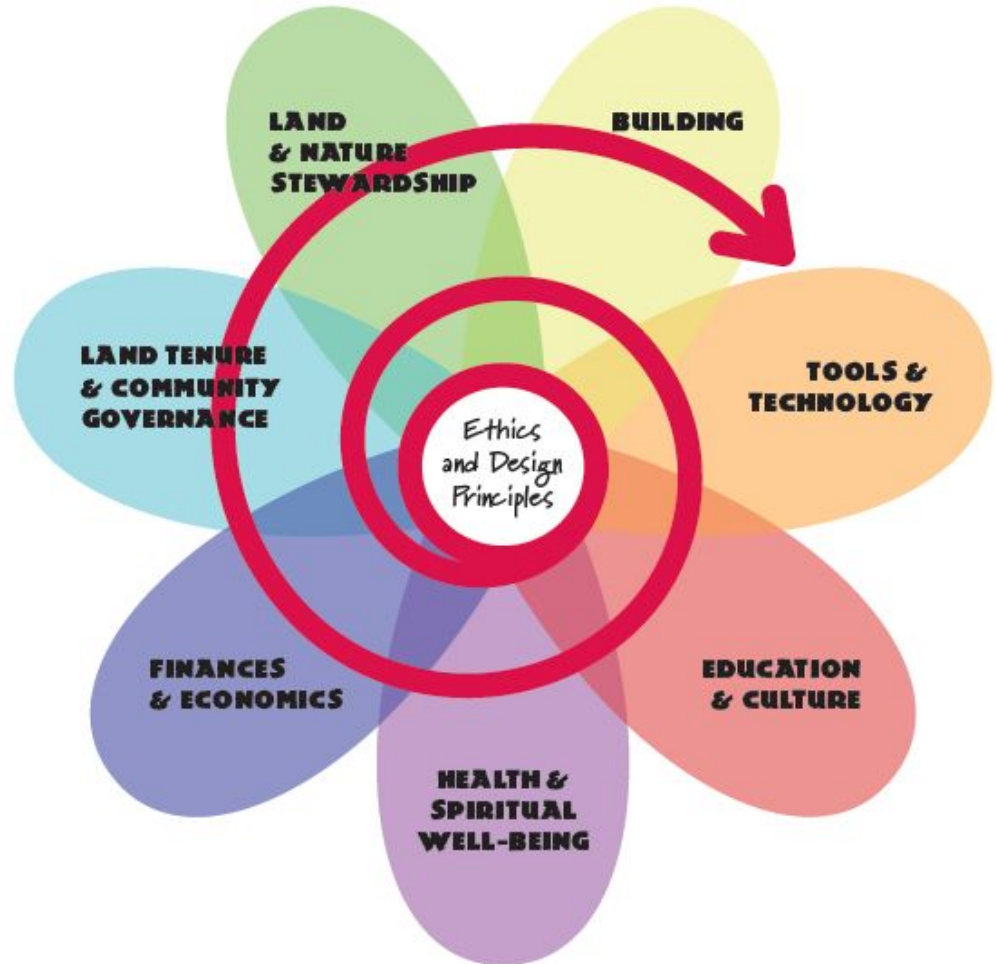
care of People

satisfy humanity needs

fair Shares

redistribution of surplus (E+P)

self-regulation of consumption a
population



permaculture

PETALS

Land & Nature stewardship

Buildings

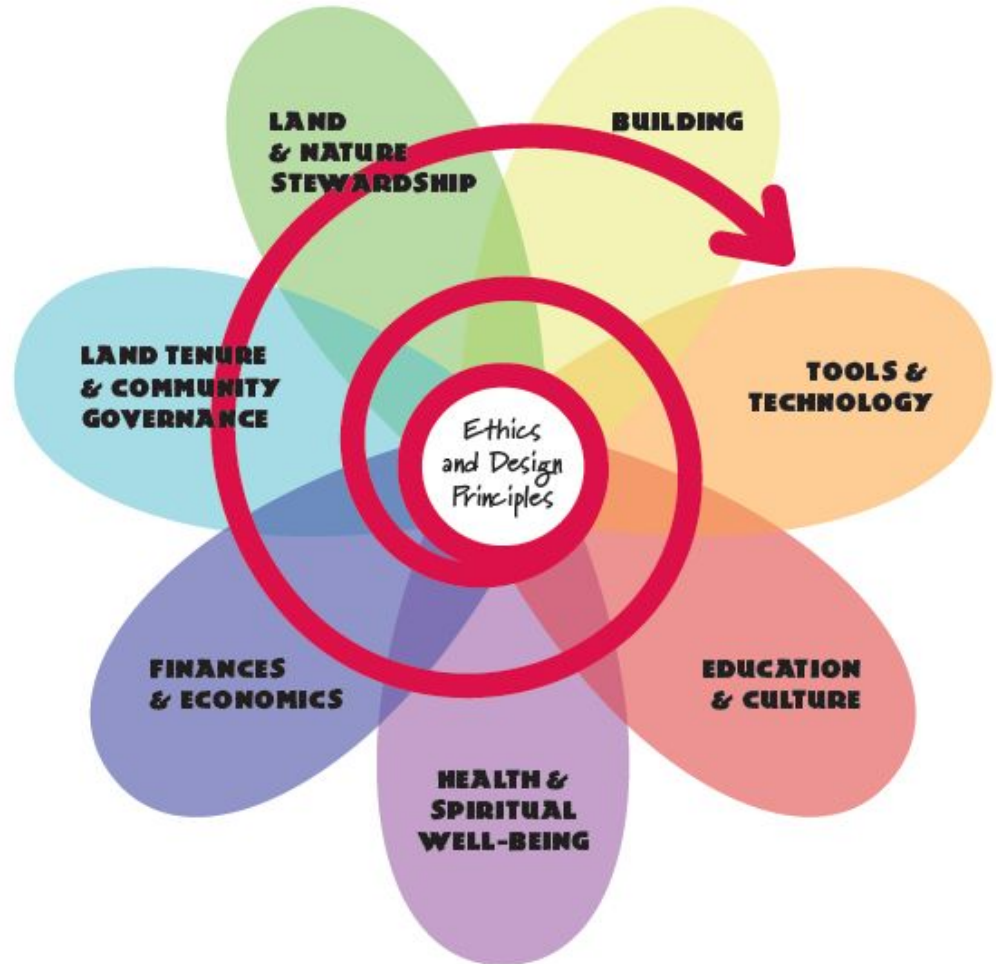
Tools & Technology

Education & Culture

Health & Spiritual wellbeing

Finance & Economics

Land tenure & Community
governance



permaculture

systems thinking design



designing outside
the box **and into**
nature

Observe

resources & limits

Understand

natural systems

cycles

patterns

Collaborate

fertility & diversity

permaculture

systems thinking design

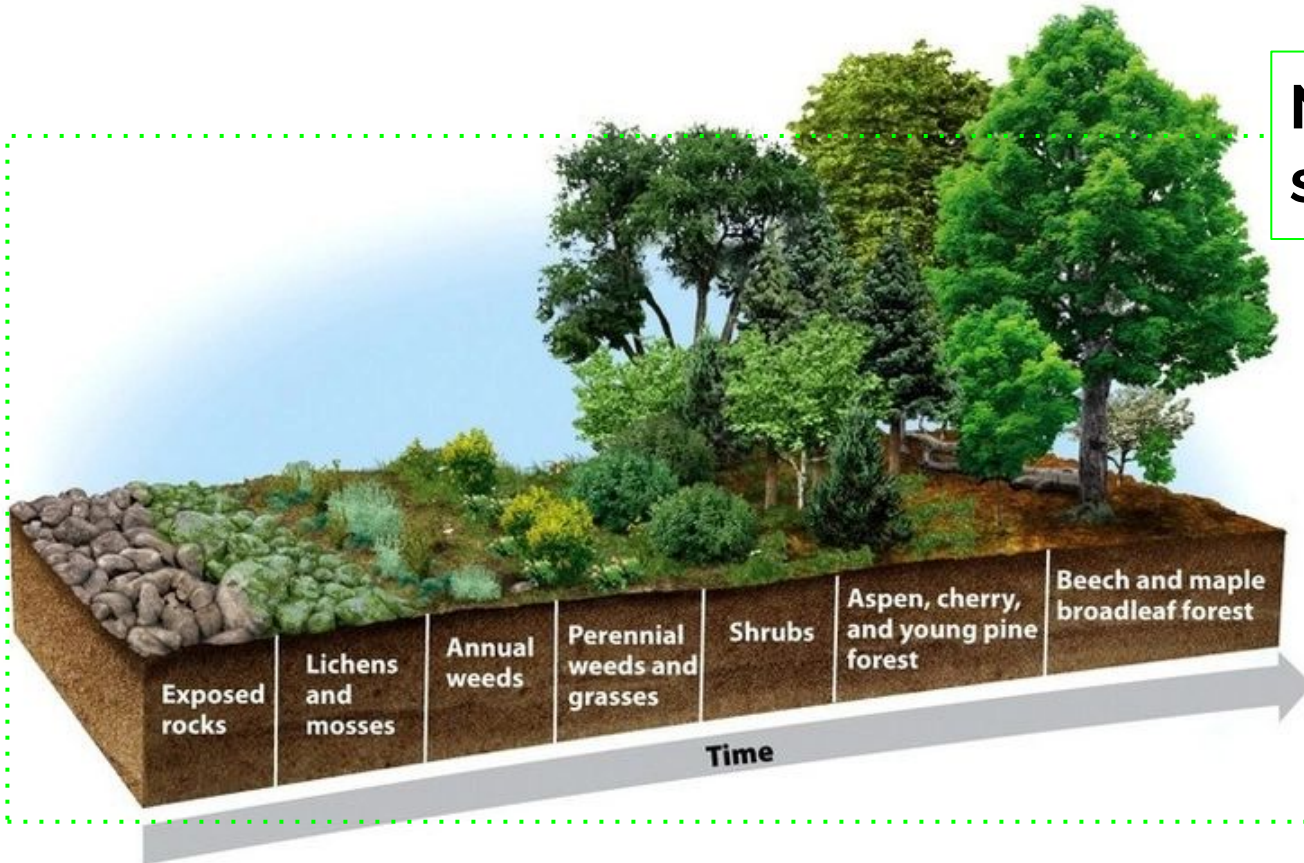
hierarchy - order

Natural
succession

Multifunction

Vision

Think about the 7
next generations

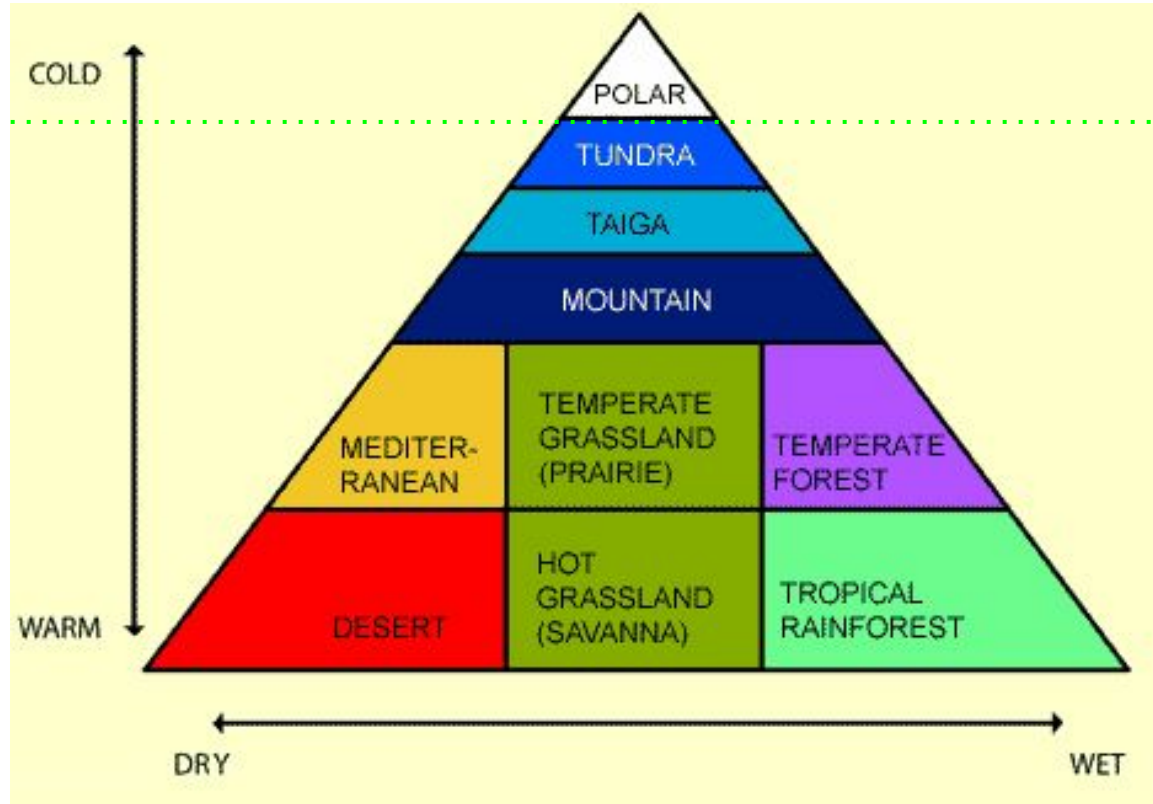


permaculture

systems thinking design

positive feed-back

resilience



Self-organization
the system as more of the
sum of its parts

Biodiversity
adapted to ecosystem



"THE ONLY THING
THAT IS CONSTANT
IS CHANGE."

-HERACLITUS

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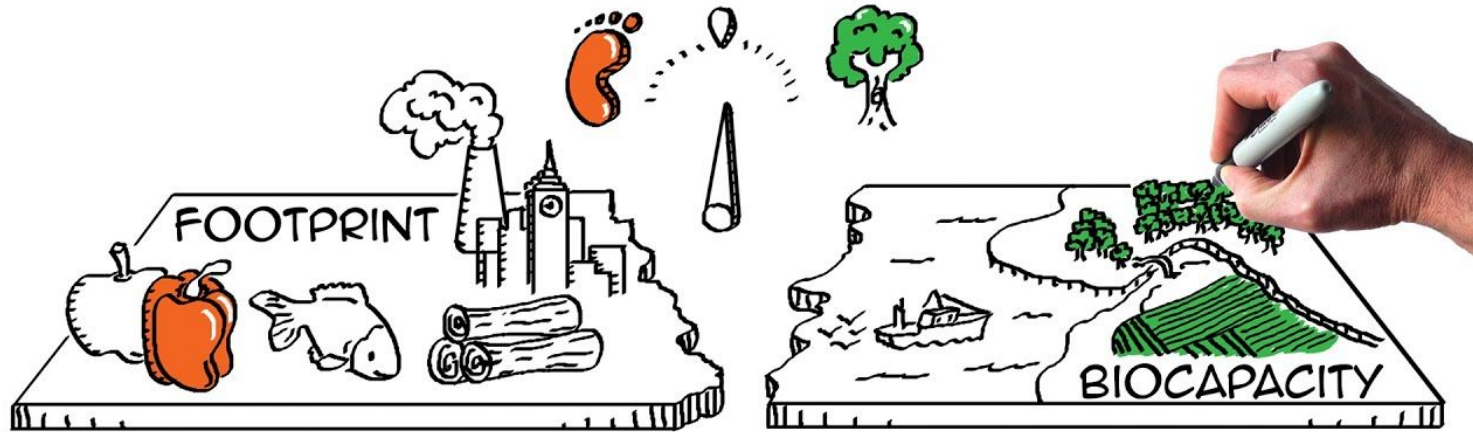
Outdoor class in Agua García Forest

Evaluation + Diploma + Next steps

environmental education

... **learning and acting for
better future**

<https://www.footprintcalculator.org/home/en>



ECOLOGICAL FOOTPRINT

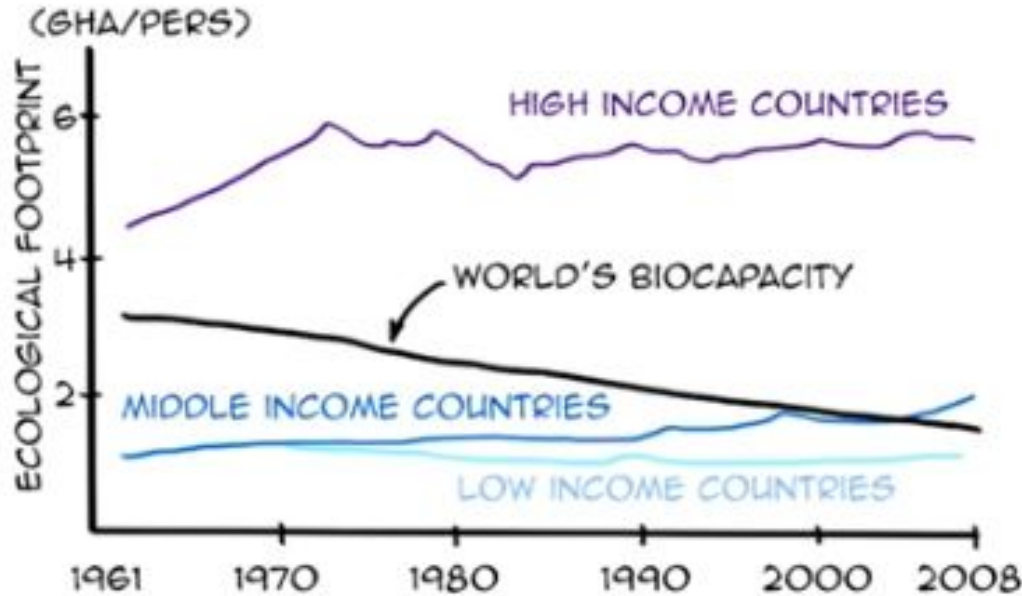
a measure for sustainability

Bring on the learning revolution! Ken Robinson
<https://www.youtube.com/watch?v=kFMZrEABdw4>

ECOLOGICAL FOOTPRINT

Earth Overshoot Day

2021, July 29th



ECOLOGICAL FOOTPRINT

www.footprintcalculator.org

do you know your ecological footprint?

Global Footprint Network®

In partnership with: Life Is On | Schneider Electric

Earth Overshoot Day 2021 is July 29

WHAT IS YOUR

Ecological Footprint?

How many planets do we need if everybody lives like you?

When is your personal Overshoot Day?

TAKE THE FIRST STEP

FR

inspiring humans



Ellen MacArthur

The **circular economy** is an attractive alternative that seeks to **redefine what growth is**, with an emphasis on benefits for all of society. This implies **decoupling economic activity from the consumption of finite resources and eliminating waste from the system from design.**

Ellen MacArthur Foundation

OUR MISSION IS TO ACCELERATE THE TRANSITION TO A CIRCULAR ECONOMY

At the Ellen MacArthur Foundation, we develop and promote the idea of a circular economy. We work with, and inspire, business, academia, policymakers, and institutions to mobilise systems solutions at scale, globally.

[Learn more](#)

<https://www.ellenmacarthurfoundation.org/>

inspiring humans



Ernst Gotsch

Ernst Gotsch is a Swiss farmer and researcher who works mainly in Brazil. It has originated a **system of climate and biodiversity friendly sustainable agriculture techniques known as syntropic agriculture or dynamic agroforestry.**

Syntropic agriculture



<https://www.youtube.com/watch?v=gSPNRu4ZPvE>

inspiring humans



Daniel Schmachtenberger

Motivated by the belief that advancing **collective intelligence and capacity is foundational to the integrity of any civilization**, and necessary to address the unique risks we currently face given **the intersection of globalization and exponential technology**.

The Consilience Project is developing a body of social theory and analysis that explains and seeks solutions to the unique challenges we face today.

Consilience (n):

"In science and history, consilience is the principle that evidence from independent, unrelated sources can 'converge' on strong conclusions.

That is, when multiple sources of evidence are in agreement, the conclusion can be very strong even when none of the individual sources of evidence is significantly so on its own."

<https://consilienceproject.org/about/>

<https://civilizationemerging.com/media/>

EMERGENCE Talk

<https://www.youtube.com/watch?v=eh7qvXfGQho>

permaculture



permaculture



permaculture



permaculture



permaculture



permaculture



permaculture



permaculture



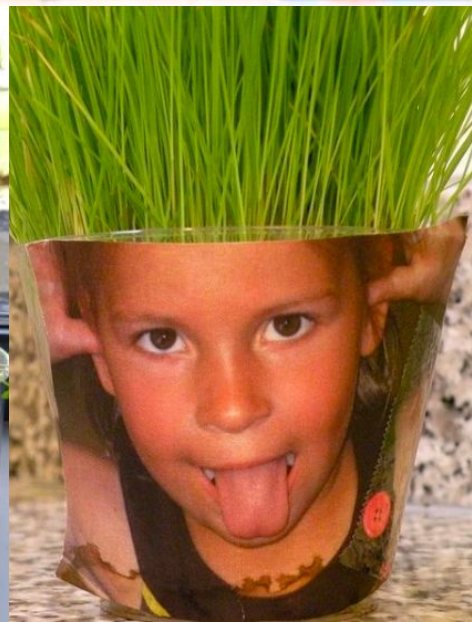
environmental stewardship

Class vertical gardening



environmental stewardship

Personalized plant pots

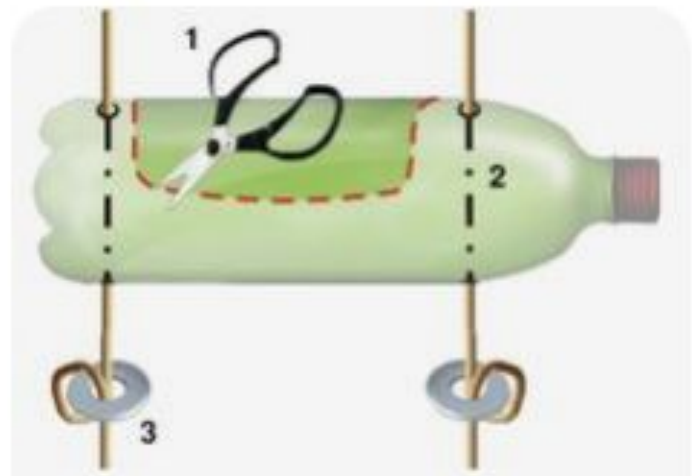


environmental stewardship

The classroom nursery



DIY
plastic bottle
planter



environmental stewardship

Bird feeders to support wild species



environmental stewardship

Novel pets

Growing Mushrooms



Recycle, reduce and reuse applied to schools

Learn by doing about:

History: history of soap

Mathematics: measurements

Laboratory: precision, concentration, method, surprise

Chemistry: saponification reaction

Biology: properties of natural ingredients

Health: self-awareness and self-care and natural hygiene

Industry: caustic soda

Ecology: biodegradability

Economy: eco-friendly products

And more....



quérico
JABÓN
ALGAS ÁRBOL TÉ
TEA TREE ALGAE

Recycle, reduce and reuse applied to schools

Learn by doing about:

THE 4 C'S:

Critical thinking

Collaboration

Communication

Creativity

into classroom activities.



Recycle, reduce and reuse applied to schools



creativity

marketing

packaging

selling

accounting

Recycle, reduce and reuse
applied to schools

NATURAL SOAP WORKSHOP

Used oil: 420 gr.

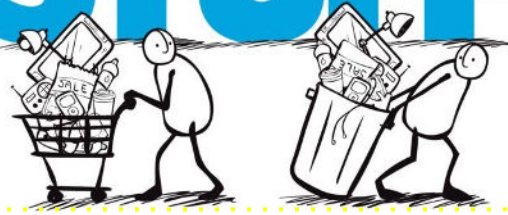
Caustic soda: 56 gr.

Water: 135 gr.



inspiring resources for sustainable + regenerative education

THE STORY OF STUFF



HOW OUR OBSESSION WITH STUFF
IS TRASHING THE PLANET,
OUR COMMUNITIES, AND OUR HEALTH
—AND A VISION FOR CHANGE

Annie Leonard

Host of the Internet film sensation
The Story of Stuff

<https://www.storyofstuff.org/>

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WELCOME TO THE CIRCULAR CLASSROOM!

An interactive educational toolkit for upper secondary high school educators and students to integrate circular thinking into the classroom.

<https://circularclassroom.com/>

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<https://circularclassroom.com/educators/>



MODULE 1

Extra Material

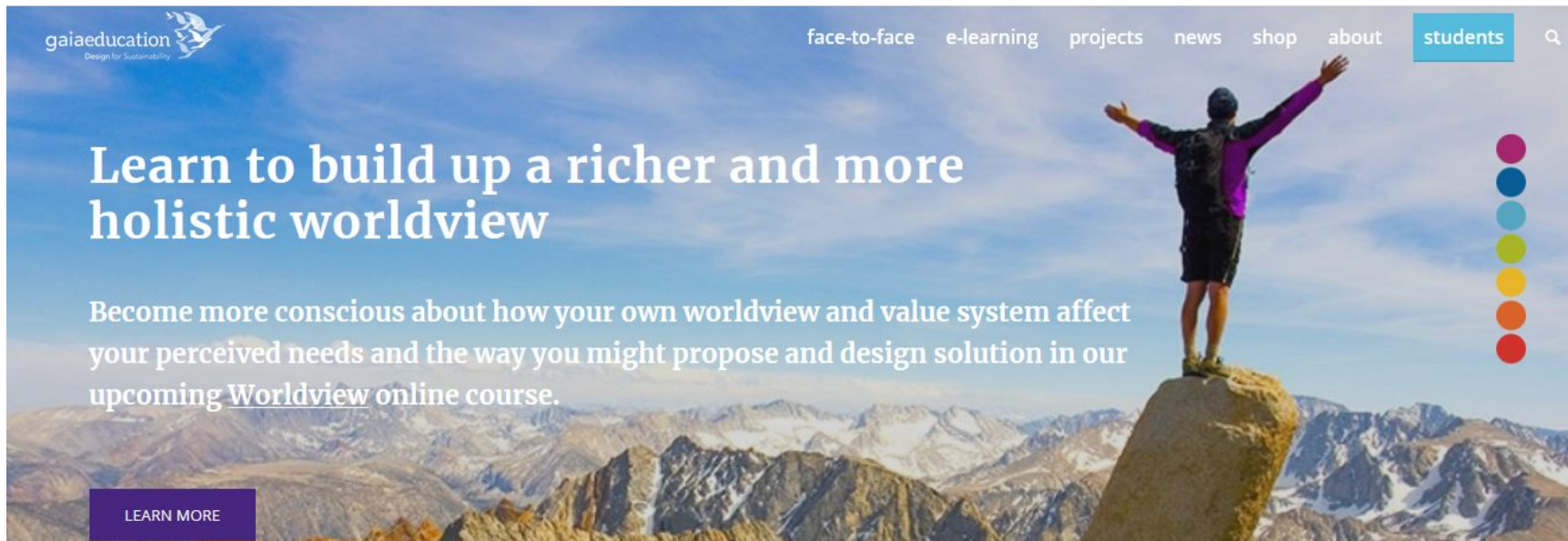
VIDEOS

- The story of stuff ›
- Life cycle of a T-Shirt ›
- Life cycle of a plastic bottle ›
- Life cycle coffee cups example ›
- Story of bottled water ›
- Quick animated introduction to the concepts of the circular economy ›
- Why biodiversity is so important ›
- How photosynthesis works ›
- How humans impact the Earth ›

LINKS

- Life cycle of jeans ›
- Life cycle of coffee cups ›
- Leyla's TED talk on plastic vs paper bags ›
- Ellen macarthur foundation on what is the circular economy ›
- A map of circular economy educational resources ›
- A guide to life cycle thinking ›
- UN Life cycle Initiative ›
- World economic forum ›

inspiring resources for sustainable + regenerative education

The image is a screenshot of the Gaia Education website homepage. The background is a photograph of a hiker standing on a large rock peak, arms raised in triumph, overlooking a vast mountain range under a blue sky. The hiker is wearing a purple jacket and a backpack. In the top left corner, the Gaia Education logo is visible, featuring a stylized bird icon and the text "gaiaeducation Design for Sustainability". The top navigation bar includes links for "face-to-face", "e-learning", "projects", "news", "shop", "about", and "students" (which is highlighted in a teal box). A search icon is located in the top right corner. On the right side of the page, there is a vertical column of six colored circles: purple, blue, light blue, green, yellow, and red. The main content area features the headline "Learn to build up a richer and more holistic worldview" in large white text. Below it, a sub-headline reads: "Become more conscious about how your own worldview and value system affect your perceived needs and the way you might propose and design solution in our upcoming Worldview online course." A purple button with the text "LEARN MORE" is positioned at the bottom left of the main content area.

gaiaeducation
Design for Sustainability

face-to-face e-learning projects news shop about students

Learn to build up a richer and more holistic worldview

Become more conscious about how your own worldview and value system affect your perceived needs and the way you might propose and design solution in our upcoming Worldview online course.

LEARN MORE

<https://www.gaiaeducation.org/>

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The
Schumacher Institute



An independent think tank for environmental, social and economic issues.



<https://www.schumacherinstitute.org.uk/>

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Transition Near me

Stories

Do Transition

News and blog

Schools in Transition



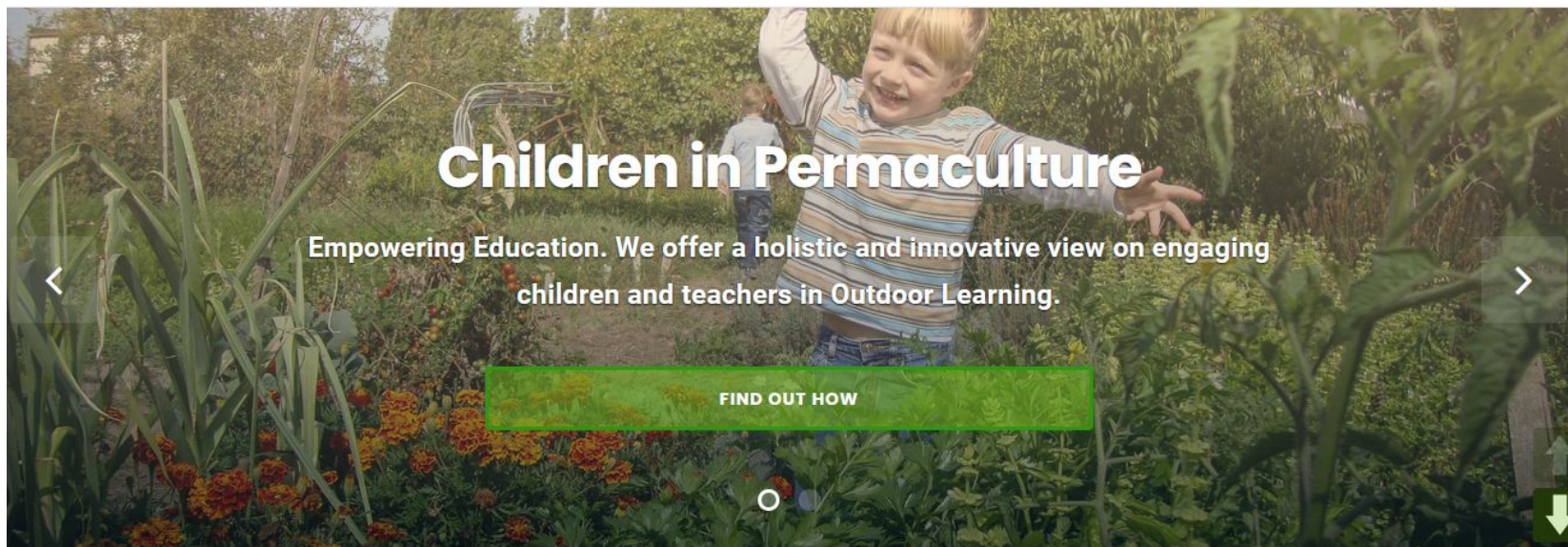
<https://transitionnetwork.org/do-transition/transition-in-action/schools-in-transition/>

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<https://www.youtube.com/watch?v=ogOlaGBNW1k&t=6s>

inspiring resources for sustainable + regenerative education

A woman with long dark hair, wearing a black top, stands in a lush garden filled with tall green plants and orange flowers. The background is a dense wall of green foliage.

Heather Jo Flores

Writing Challenges

Permaculture Courses

Food Not Lawns (free book!)

Join my community

NEW Podcast!

Find me on Youtube

<https://www.heatherjoflores.com/>

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The Work That Reconnects Network

The Work that Reconnects helps people discover and experience their innate connections with each other and the self-healing powers of the web of life, transforming despair and overwhelm into inspired, collaborative action.

~ Joanna Macy

<https://workthatreconnects.org/>

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SYSTEMS THINKING & REGENERATION MOVEMENT

The work that reconnect <https://workthatreconnects.org/>

Regenesis movement <https://regenisgroup.com/>

Climate and systems thinking <http://www.lindaboothsweeney.net/>

CIRCULAR ECONOMY

Rethinking progress <https://www.youtube.com/watch?v=zCRKvDyyHml&t=9s>

Circular design guide <https://www.circulardesignguide.com/>

INSPIRING SCHOOLS, TEACHERS, DESIGNERS AND TEACHINGS

Findhorn foundation <https://www.findhorn.org/>

Brockwood Park School <https://brockwood.org.uk/>

The Unschool of disruptive design <https://www.unschools.co/>

Leyla Acaroglu <https://www.leylaacaroglu.com/>

Youth initiative program <https://yip.se/>

Conferencia Nacional de Alternativas para a nova Educação <https://www.conane.com.br/>

School circles <https://schoolcirclesfilm.com/>

Dra. Alice Mendus <https://independent.academia.edu/DrAlysMendus> //

<https://alysmendus.wordpress.com/about/>

inspiring resources for sustainable + regenerative education



Economía Circular: descubre lo que es antes de que reviente el Planeta.

#EconomíaCircular

2,6 M de visualizaciones · hace 4 años



Nos lo estamos jugando todo. 15 minutos de viaje que no te dejará indiferente. Continúa la conversación en comentarios, o en ...

Subtítulos

15:14

Circular economy

<https://www.youtube.com/watch?v=Lc4-2cVKxp0&t=6s>



#MiEmpleoMiFuturo: un documental sobre robots, economía, clase media... y el fin del mundo

1,2 M de visualizaciones · hace 2 años



Este vídeo dispone de subtítulos en castellano y en inglés. La cuarta revolución industrial ha empezado. Robots, algoritmos ...

Subtítulos

15:51

Future jobs

Part 1

<https://www.youtube.com/watch?v=htAnVeMtrr8&t=80s>



#MiEmpleoMiFuturo 2: un documental sobre robots, economía, clase media... y el fin del mundo

706.946 visualizaciones · hace 2 años



Este vídeo dispone de subtítulos en castellano y en inglés. ¿Todavía no has visto la primera parte de este documental?

Subtítulos

16:54

Part 2

<https://www.youtube.com/watch?v=-z5z8aGRSQ0&t=8s>

inspiring resources for sustainable + regenerative education



Daniel + 7 · 9h

Ways to normalise environmental issues in our classes

Please contribute your ideas!

Background reading & watching

Daniel 16d

Article about normalising environmentalism in ELT

How do we integrate the time into our day-to-day words, how do we normalise in ELT?

Give your lessons a sustainability twist! ... 10 ways to integrate the key issue of our

Ways of normalising through lesson content

Daniel 16d

Note

Please post ideas here that give lessons a twist; don't suggest whole lesson ideas.

1 comentario

ddanimundy 15d

Ways of normalising through class time and the classroom

Daniel 16d

Note

Please post ideas here that add an environmentalist approach to the classroom, class routines, etc.

4 comments

Ways of normalising throughout the school

Daniel 16d

Note

Please post ideas here that push action and activism out to the level of the institution.

Añadir comentario

Ways of normalising outside of school

Daniel 16d

Note

Please post ideas here that encourage action in our students' and co-workers' lives away from the school.

Añadir comentario

<https://padlet.com/danieljamesbarber72/vvoow2763mc1ba6q>



thank you!

environmental changes for sustainable schools

... sharing the impact while **keeping it positive** and **future focused**

 **Erasmus+**
Enriching lives, opening minds.