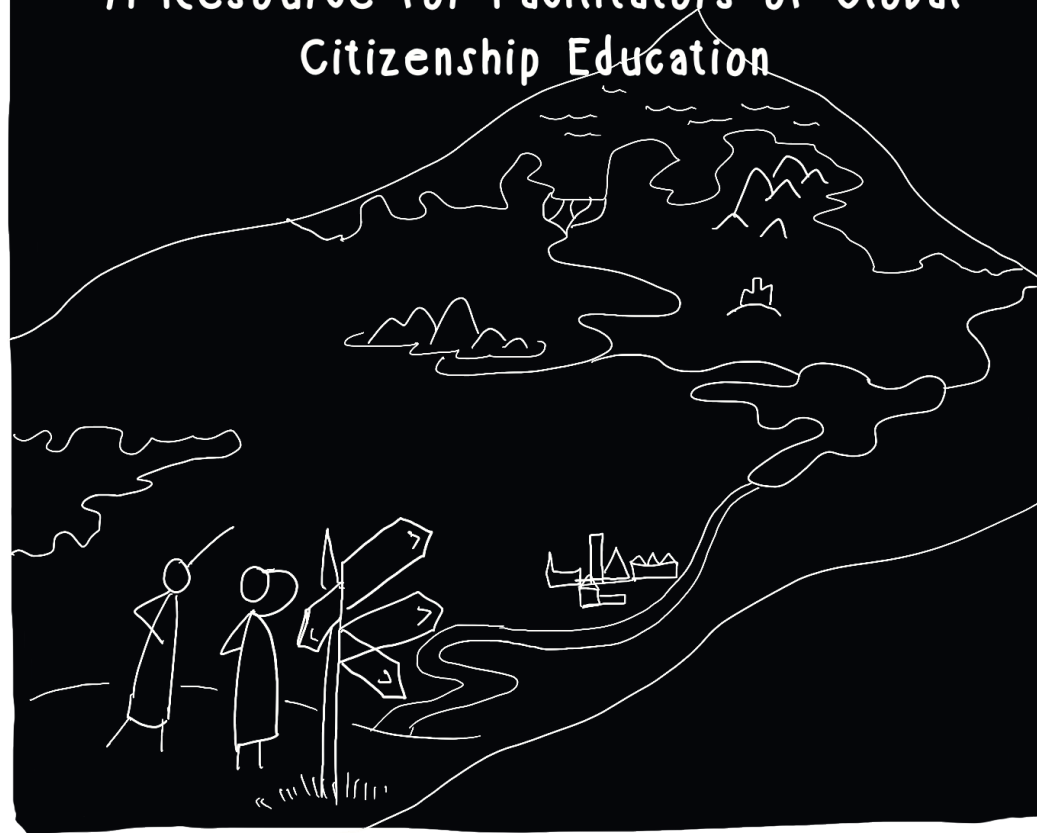


# EXPLORING ✧ SYSTEMS ✧

A Resource for Facilitators of Global  
Citizenship Education



## CONTENTS

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1. Global Citizenship Education and Systems Thinking
2. Principles of living systems
3. Putting it into practice: Ways of Being
4. putting it into practice: some activities and tools

## ABOUT CREATIVITY AND CHANGE

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In the Creativity & Change programme we believe that creative engagement can support transformative learning experiences that connect the head, hand and heart and nurture competences of global citizens that are important for the sustainable future of our world. The programme is part of Crawford College of Art, Munster Technological University in Cork. it is supported by Irish Aid through its Global Citizenship Education programme. Creativity & Change offers a number of educational strands: a Level 9 accredited course, 2-day trainings, creative engagement workshops and event-based workshops.

## FIND OUT MORE

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Creativity & Change can be found at:

Web: [www.creativityandchange.ie](http://www.creativityandchange.ie)

Social: Fb. - [creativityandchange](#) Instagram -  
@creativityandchange

# GLOBAL CITIZENSHIP EDUCATION



Irish Aid defines Global Citizenship Education (GCE) as:

... a lifelong educational process which aims to increase public knowledge and understanding of the rapidly changing, interdependent and unequal world in which we live. By challenging stereotypes and encouraging independent thinking, global citizenship education helps people to critically explore how global justice issues interlink with their everyday lives. GCE is transformative. It enables people to analyse and challenge the root causes and consequences of global poverty and inequality and to transform the social, cultural, political and economic structures which affect their lives and the lives of others. It aspires to change the way people think and act; empowering them to take action and become active global citizens in the creation of a fairer, more just, more secure and more sustainable world for all.

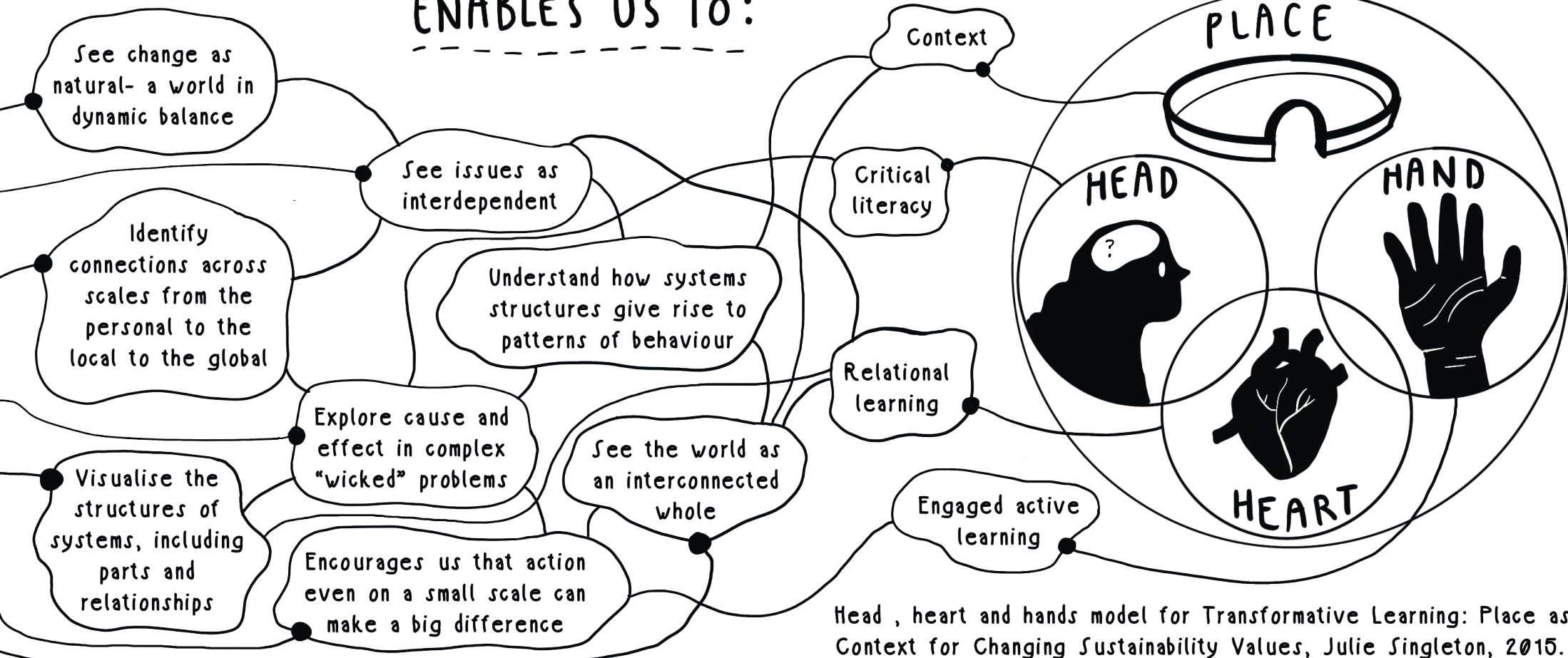
What is it and how is systems thinking related to it?

# TRANSFORMATIVE LEARNING

## SYSTEMS THINKING

Creativity & Change uses this model as a basis for its approach to transformative GCE. The Head represents learning connected to the cognitive domain and critical literacy. The Heart represents relational learning and our emotions. The Hand represents active engagement. All of this takes place within a context which "provides a framework of authentic experience for deeper reflection."

ENABLES US TO:



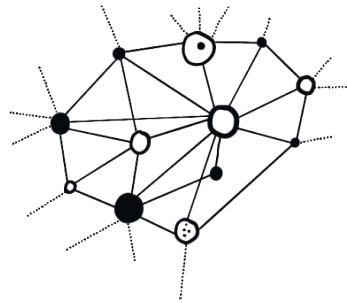
Head, heart and hands model for Transformative Learning: Place as Context for Changing Sustainability Values, Julie Singleton, 2015.

# PRINCIPLES of LIVING SYSTEMS

What we talk about when we talk about Systems Thinking.

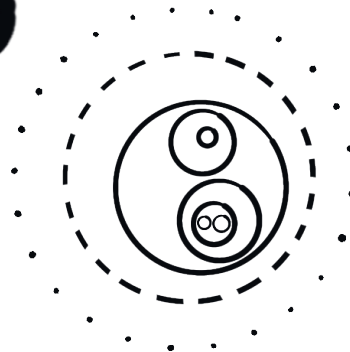
## 1. NETWORKS

Parts and relationships, interdependence, decentralisation, leverage.



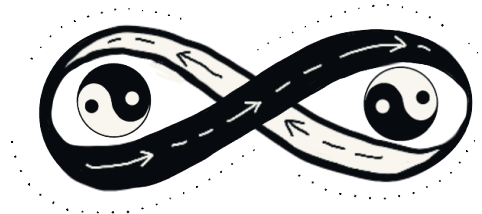
## 2. NESTED SYSTEMS

Systems within systems, context, development from the bottom up, emergence, holarchy, fractals



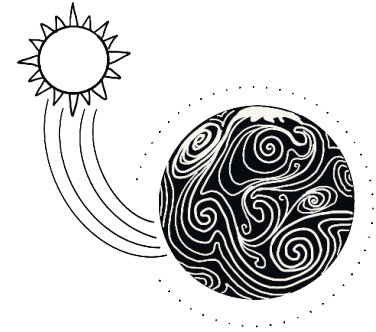
## 3. CYCLES

Cyclical patterns, constant change



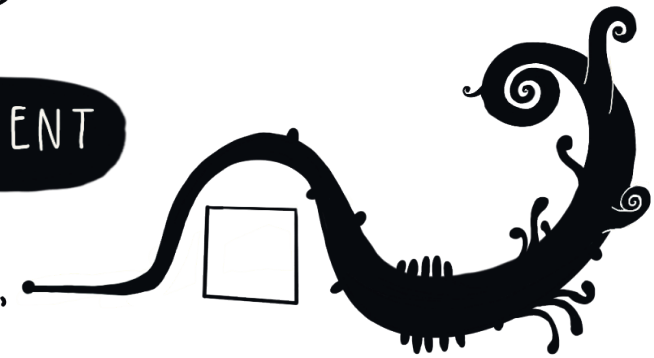
## 4. FLOWS

Systems are open to a constant flow of energy and information



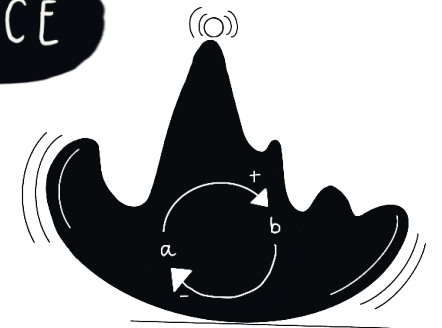
## 5. DEVELOPMENT

Intentional adaptation, learning, diversification, iteration.



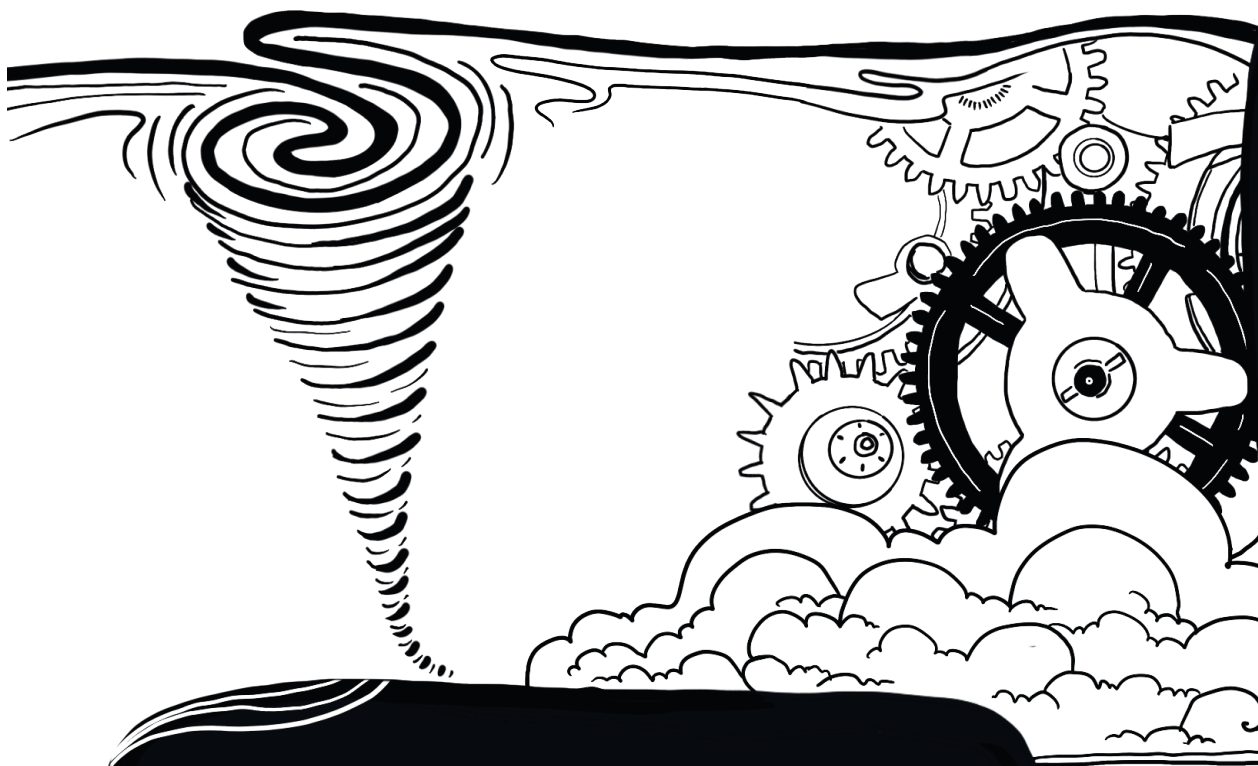
## 6. DYNAMIC BALANCE

Feedback loops, non-linearity, "butterfly effect", stability over time









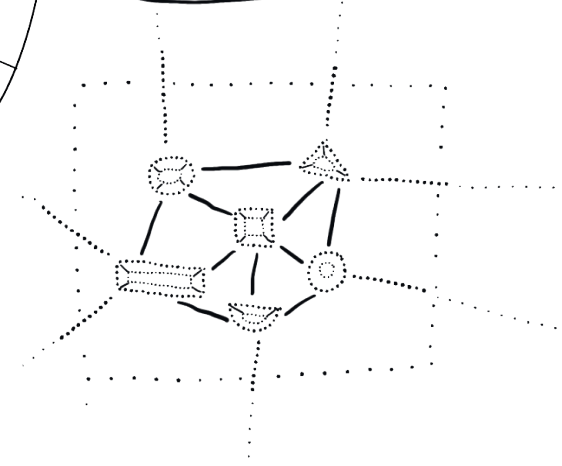
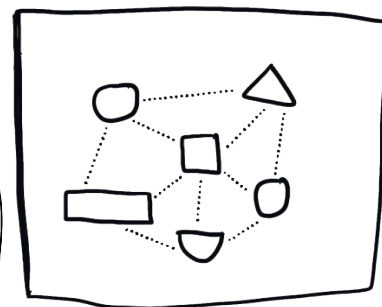
The ... crises we are facing are not separate but interconnected expressions of one single crisis: a crisis of perception.

Fritjof Capra, as quoted by Daniel Christian Wahl, 2022

A WAY of  SEEING

We are but whirlpools in a river of everflowing water. We are not stuff that abides but patterns that perpetuate themselves.

Norbert Wiener.

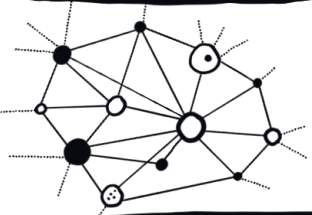


# PUTTING IT INTO PRACTICE

Activities underlined are explored in the following pages.

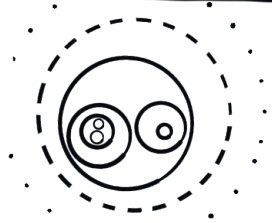
Applying Principles of Livings Systems to GCE.  
Methods and Approaches:

## 1. NETWORKS



- Activities that support relational learning such as “check-ins”
- System mapping with diagrams such as mind-maps, upstream/ downstream map

## 2. NESTED SYSTEMS



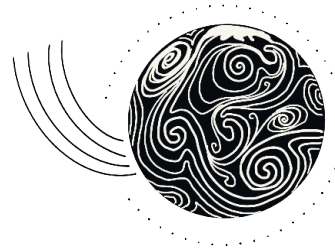
- Conversations that liberate emergent intelligence e.g. World Cafe
- Visualising an issue at different levels e.g PLiNGs

## 3. CYCLES



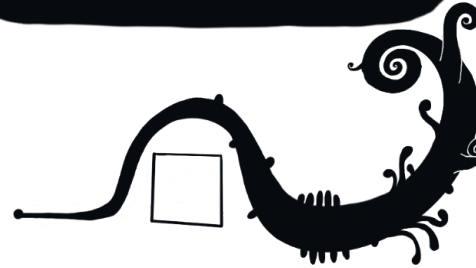
- Systems Change visual models such as the Adaptive Cycle, Two Loops
- Learning Models such as Kolb's Cycle of Experiential Learning

## 4. FLOWS



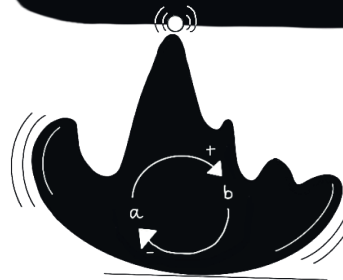
- Activities that pay attention to flows of information in a learning space- critical literacy and reflection

## 5. DEVELOPMENT



- Activities that make purpose visible
- Activities that highlight our assumptions e.g. Iceberg Model

## 6. DYNAMIC BALANCE



- System mapping that includes causal loops
- Dynamic Triangle Exercise



# METHODS

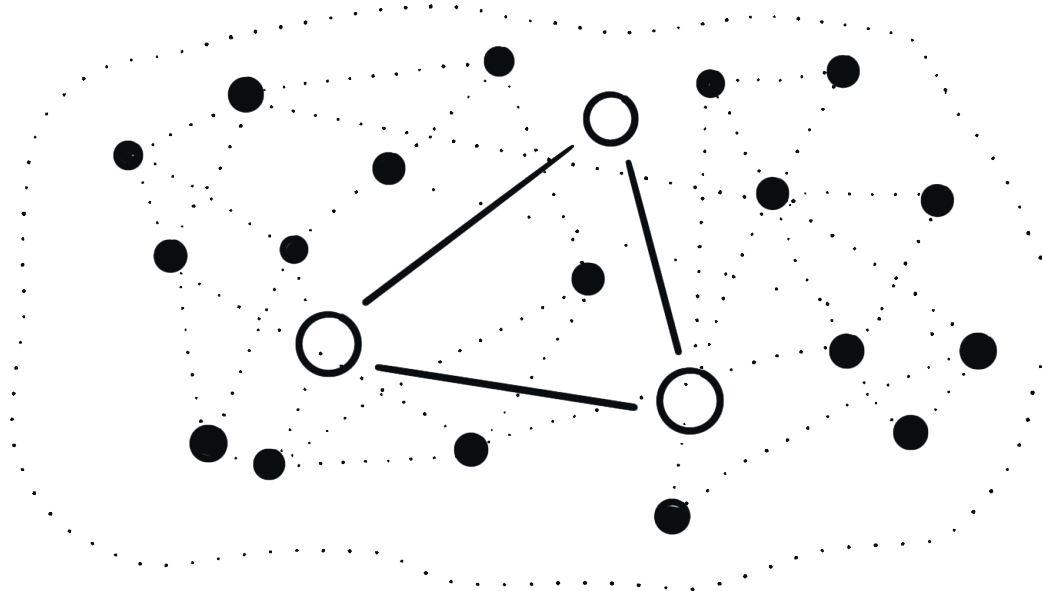
## TRIANGLE EXERCISE

The purpose of this exercise is to give participants a physical experience of being in a system. Based on this, the facilitator can draw out key words and build towards an input on Properties of Living Systems.

You Need:

A group of people at least 15 in number. An empty room/ space.

From Macy & Young Brown, 1998



## DIRECTIONS:

Have the group stand in a circle in a room or outdoor space free of tables, chairs or any obstacles. Invite each person to SECRETLY choose two other people in the circle. Give the following instruction:

"When I say GO silently move so that you form an equilateral triangle with the two other people you have chosen. Keep going IN SILENCE until I say Pause."

Allow the exercise to run for 5- 7 minutes or until things naturally come to a halt. Then either repeat OR move to debrief.

## DEBRIEF:

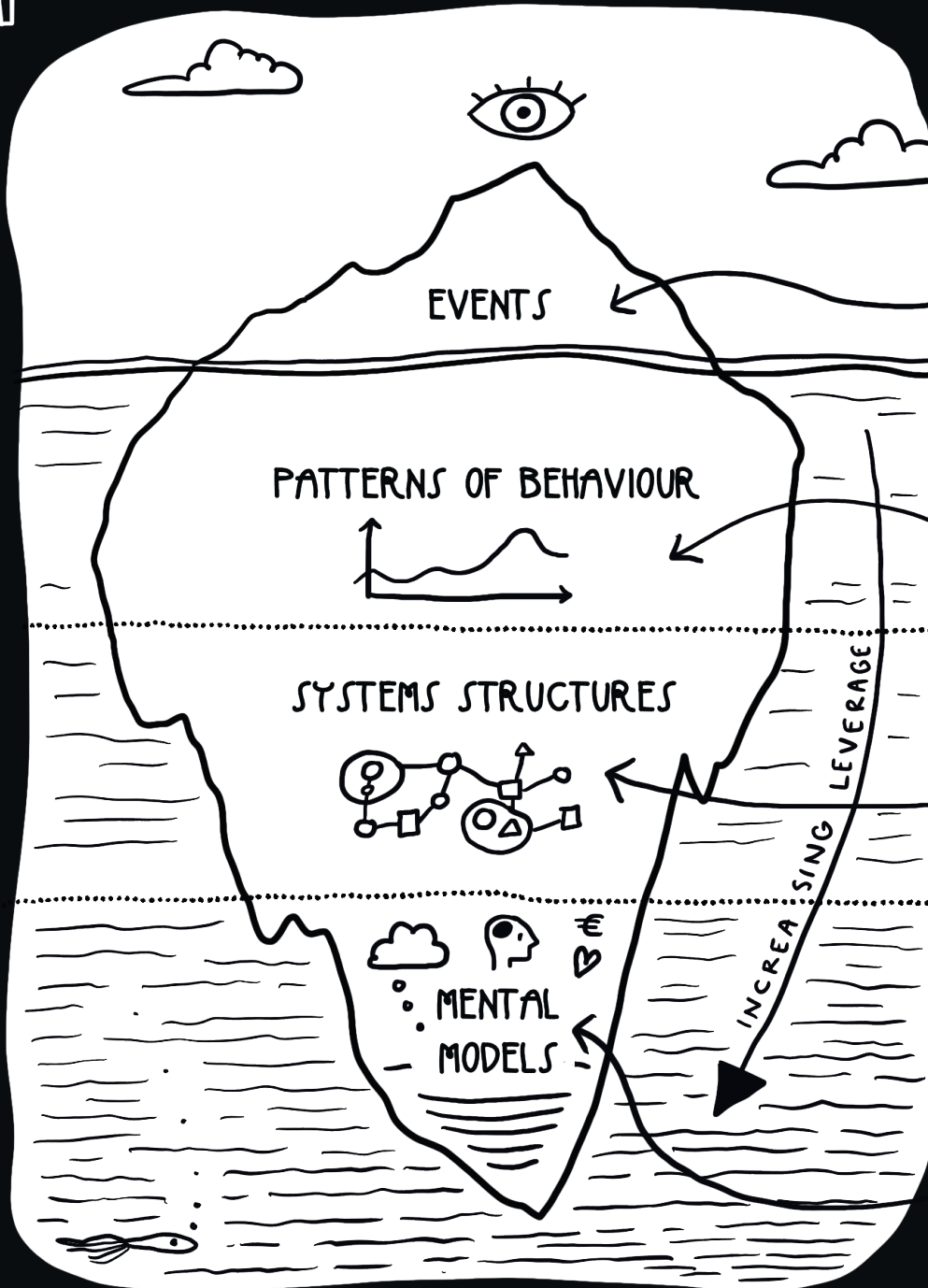
- Part One: What happened? what did you experience? What did you notice?
- Part Two: what did you experience that might help us to understand systems?

## ALTERNATIVE ITERATIONS:

Ask each person to choose 2 people as before- but this time adjust the options. Observe the group and select something that only 2 or 3 people have- for example black shoes or wearing a skirt. Instruct each person to choose two people- one of whom "has black shoes". This time notice the impact of a minority of people having a large number of connections.



# ICEBERG MODEL



From the Academy for Systems Change (Donella Meadows)

Use this visual framework to think about systems change.  
How can we intervene at different levels to effect change?  
Where will our efforts have most impact (leverage) ?

Things we can observe  
happening around us.

Trends over time, patterns  
we can see by gathering  
and visualising data.

How our systems are  
organised, elements,  
relationships, forces,  
feedback loops.

How we see the world,  
assumptions, values, beliefs.

Climate refugees sleeping  
in tents on the street in  
my city

Increasing social inequality  
Depleting resources  
Increasing environmental  
damage

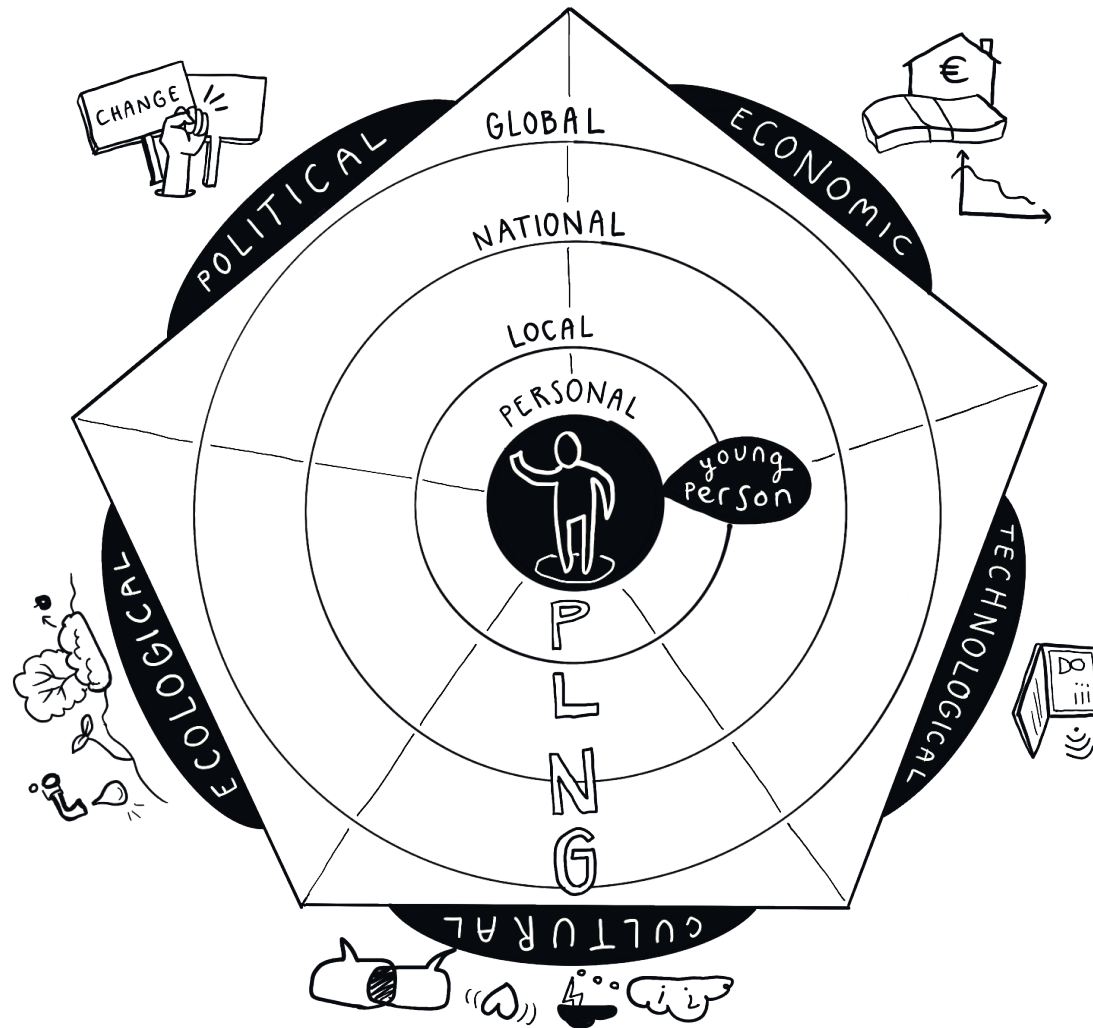
Extractive waste-  
generating economies  
Human well-being  
dependent on economic  
growth

Economies can grow  
infinitely

Nature and humans are  
separate

# PLiNG & 5 FACES

Use this visual template to explore an issue in its local to global context. It also invites you to view it from 5 different perspectives (faces) on these levels, resulting in a multidimensional view of an issue.



This activity puts young people in the centre. How do issues like inequality show up in their reality?

Step 1: Select an issue that is of concern to the group

Step 2: Draw out the template on large flip chart paper or print it out. Explain the elements of the template.

Step 3: Give a guiding question: for example: How does the issue of inequality affect you, personally? In your local community? At a National level? At a global level? What does this look like from a Political perspective? From an ecological perspective?

Step 4: Try to repeat the exercise but from the perspective of another young person- perhaps someone from a different part of the world.

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This model was developed by Dr. Momodou Sallah of De Montfort University in the UK in the context of Global Youth Work.

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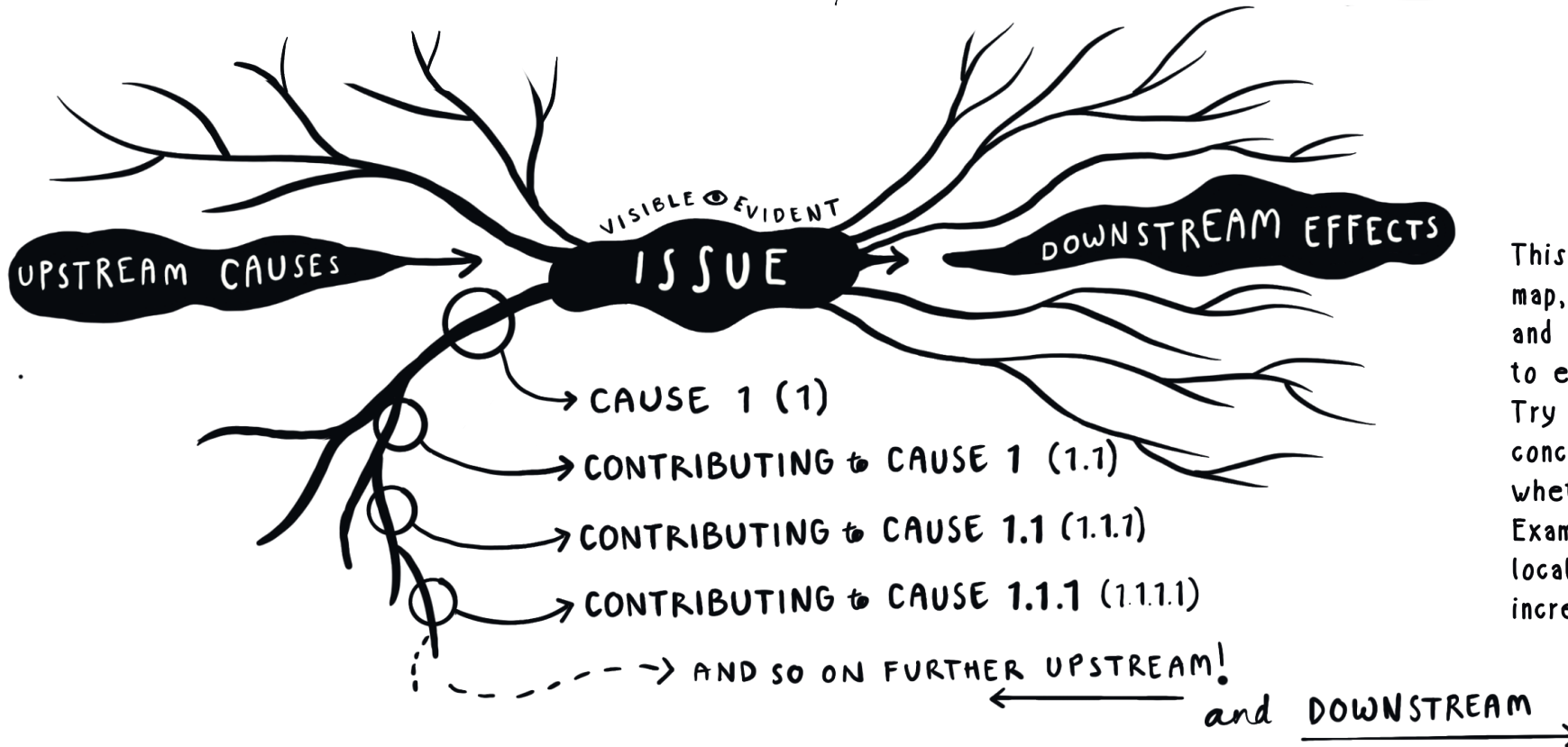
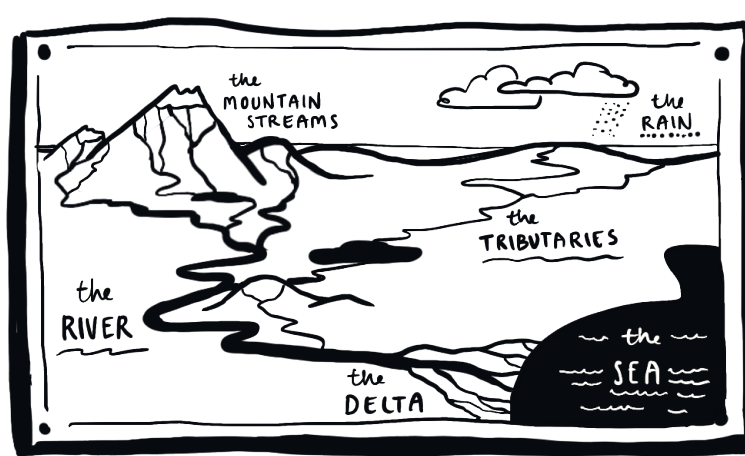
What we practice at the small scale sets the pattern for the whole system... we must create patterns that cycle upwards.

adrienne maree brown

# UPSTREAM/DOWNSTREAM DIAGRAM

You Need:

- flip chart paper
- markers
- blu tac or tape



This activity is just like a mind-map, but with cause on one side and effect on the other. Use it to explore an issue of concern. Try to select an issue that is concrete and observable, whether local or global. Examples could be destruction of local hedgerows, or global increase in refugees.



# SYSTEMS MODEL

\* with Post-its

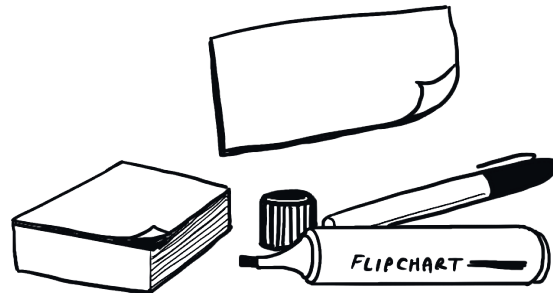
How does a system work? What are the parts and relationships? Is it possible, using just post-its and markers to co-create a working model of a particular system?

HOW DO WE HAVE 11,750  
UNHOUSED PEOPLE in  
IRELAND in 2023?

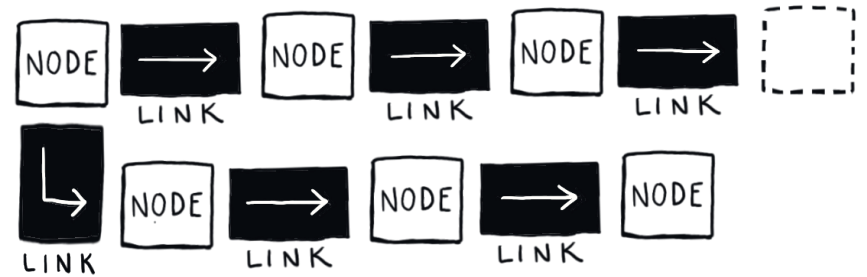


You Need:

- a large blank wall space
- a group of 4- 5 people
- post-its and markers
- a starting question



This activity is adapted from the Video "How To Make Toast" a TED talk by Tom Wujec, available on YouTube.



Step 1: Create a starting question. How you frame the question greatly influences the outcome. Use "How" or "Why" questions.

Step 2: Allocate wall space and a set time (20 mins is good) for the group to create a systems model in response to the question. They must create **NODES** (parts) and **LINKS** (relationships). Other than that they are free to organise it as they see fit.

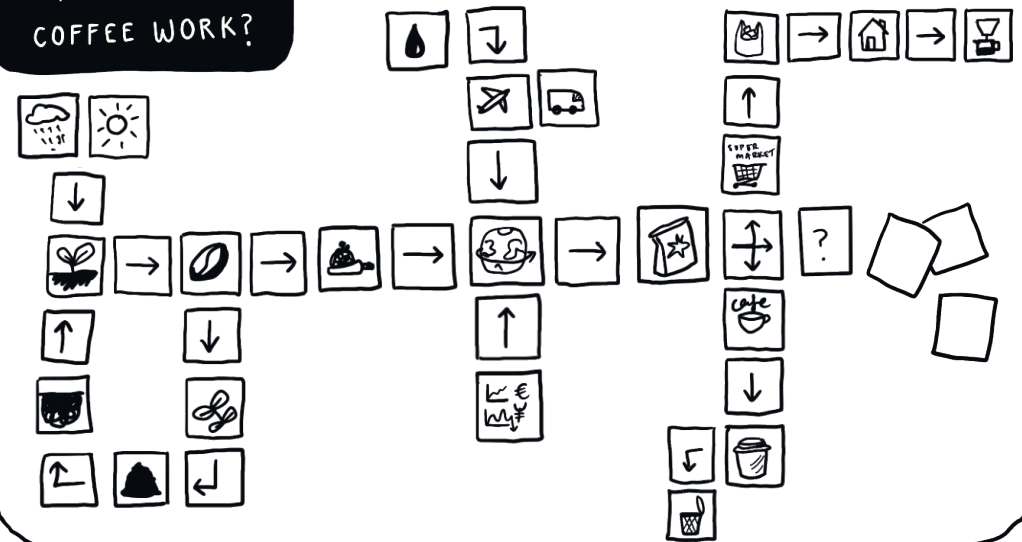
Step 3: Step back and reflect.

**Step 4 Iterate.** If you have time, allow the group 10 more minutes to refine and iterate their model.

OPTION: spend the first 5 minutes in silence.



## HOW DOES COFFEE WORK?



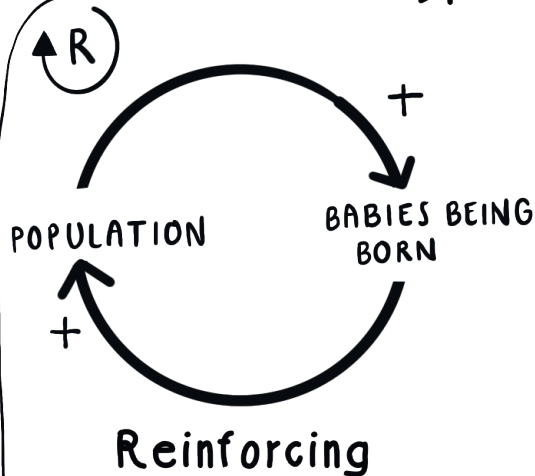


# CAUSAL LOOPS

CAUSE: A   B 

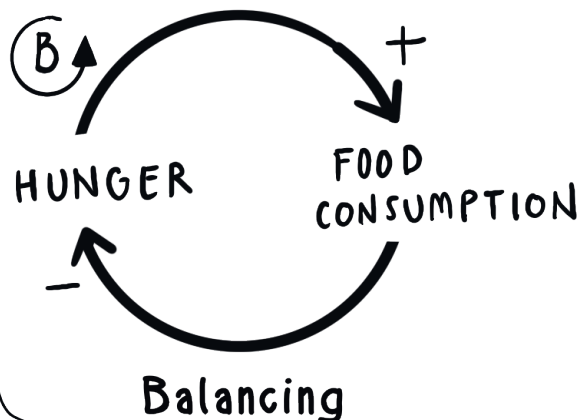
A CHANGE in A CAUSES a CHANGE in B

## 2 Types of Loops



- Also referred to as "Vicious Cycles" (things keep getting worse and worse) or "Virtuous Cycles" (things keep getting better and better).

- Examples: compound interest in a savings account.

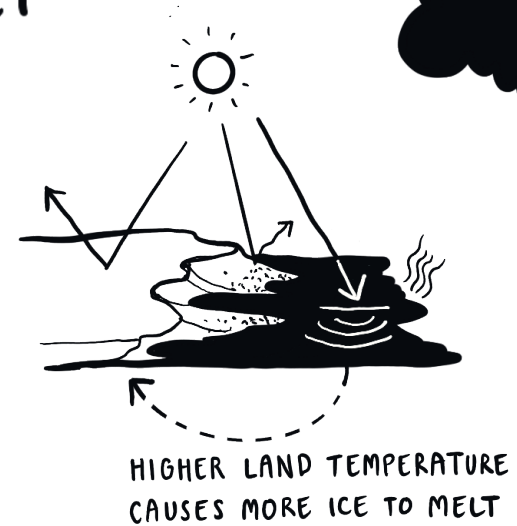
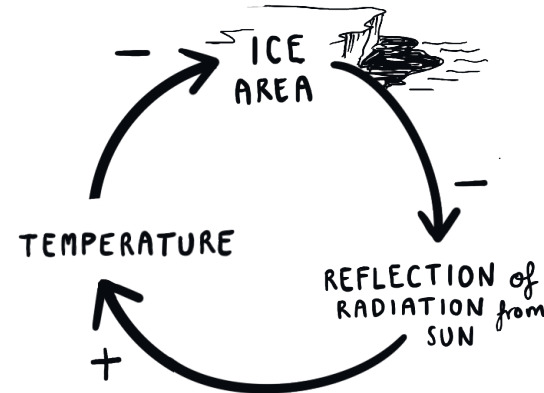


- Also referred to as Stabilising loops. Counter change in one direction with change in another.

- Examples: Thermostat regulating the temperature in a house.

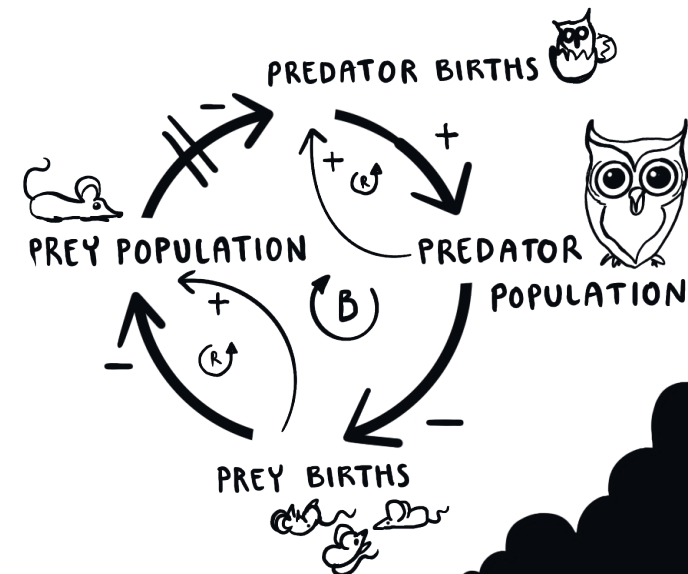
## examples from nature

### THE ALBEDO EFFECT



In this Causal Loop we have 2 Reinforcing loops (more births leads to higher population in both owls and mice). However, overall there is a balancing relationship- if the owls eat nearly all the mice, then their own population will decline, allowing the population of mice to build back up again. The double line across the arrow indicates a time delay.

### PREDATOR-PREY





# ABOUT

THIS PUBLICATION

This Zine is a resource for educators who work in non-formal learning contexts such as Adult & Community Education, Youth Work or voluntary groups. The purpose is to give educators ideas and tools for building the capacity of groups to make sense of the complex systems in which they exist. If we can make sense of complex systems, we have a better chance of changing (or redesigning) them.

This Zine is produced by Creativity & Change with the funding support of Irish Aid.



*Nurturing  
Change-Makers  
Imagining a  
Better World*



Collaborative Institute in Design  
Crawford College of Art and Design



Department of Foreign Affairs  
An Roinn Gnóthaí Eachtracha