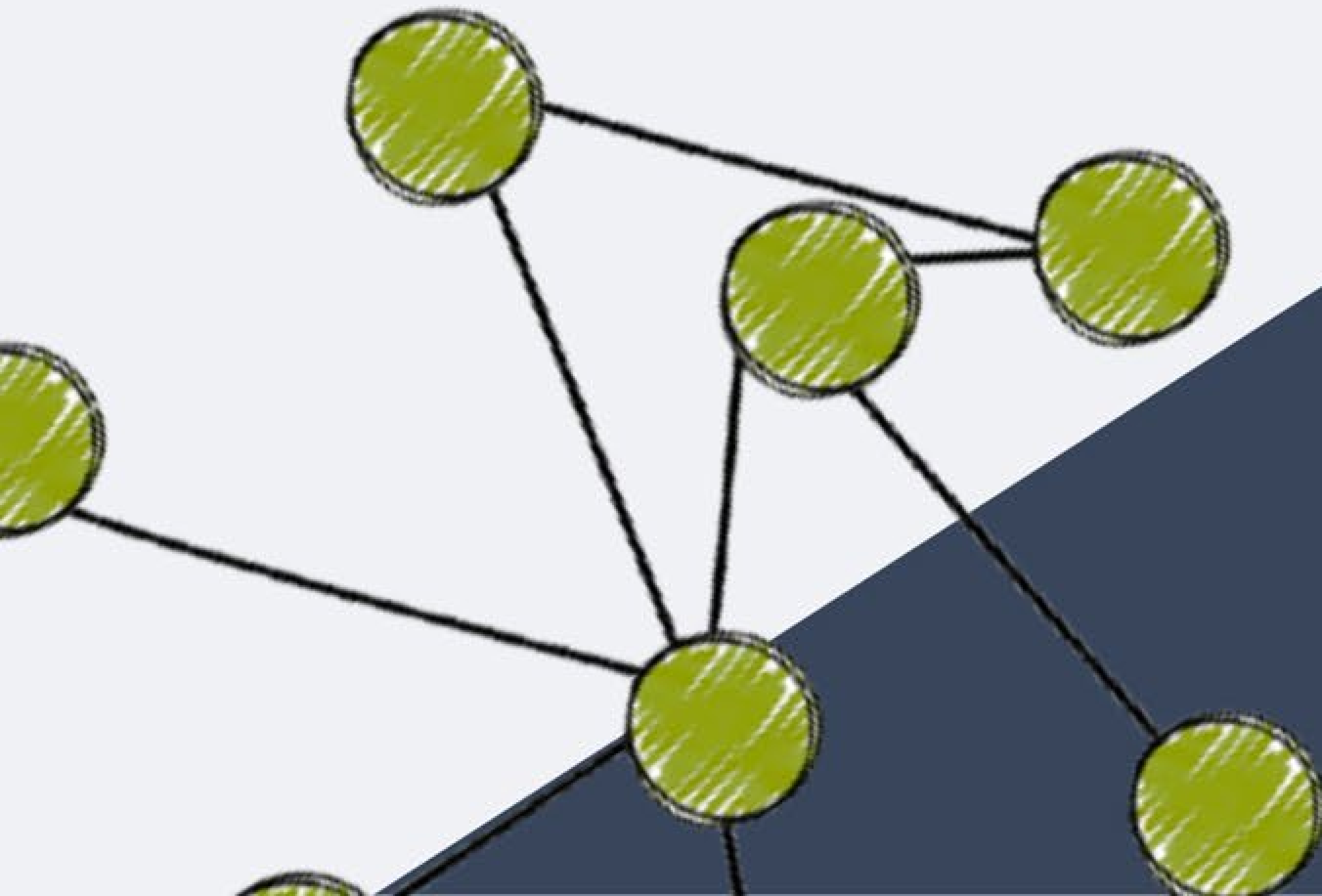


From Problems to Possibilities

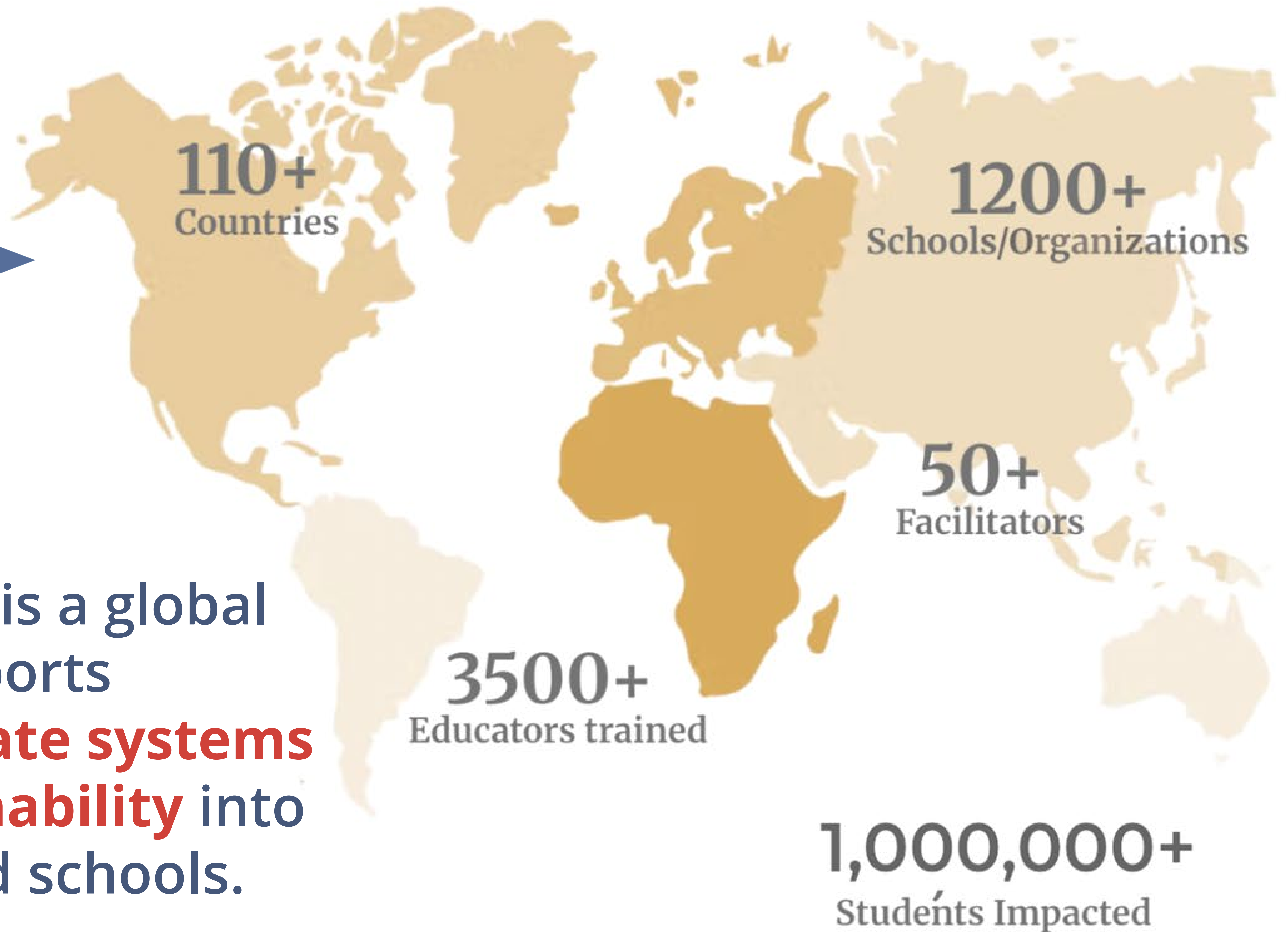
The Power of *Systems Thinking* for Environmental Educators





COMPASS EDUCATION

**A global movement of
educators who believe
that a flourishing,
sustainable world begins
with our students and
schools.**



Compass Education is a global non-profit that supports educators to **integrate systems thinking for sustainability** into their curriculum and schools.

Helping educators and mission-driven organizations design learning experiences that **enable people to understand and shift the systems** shaping our world.



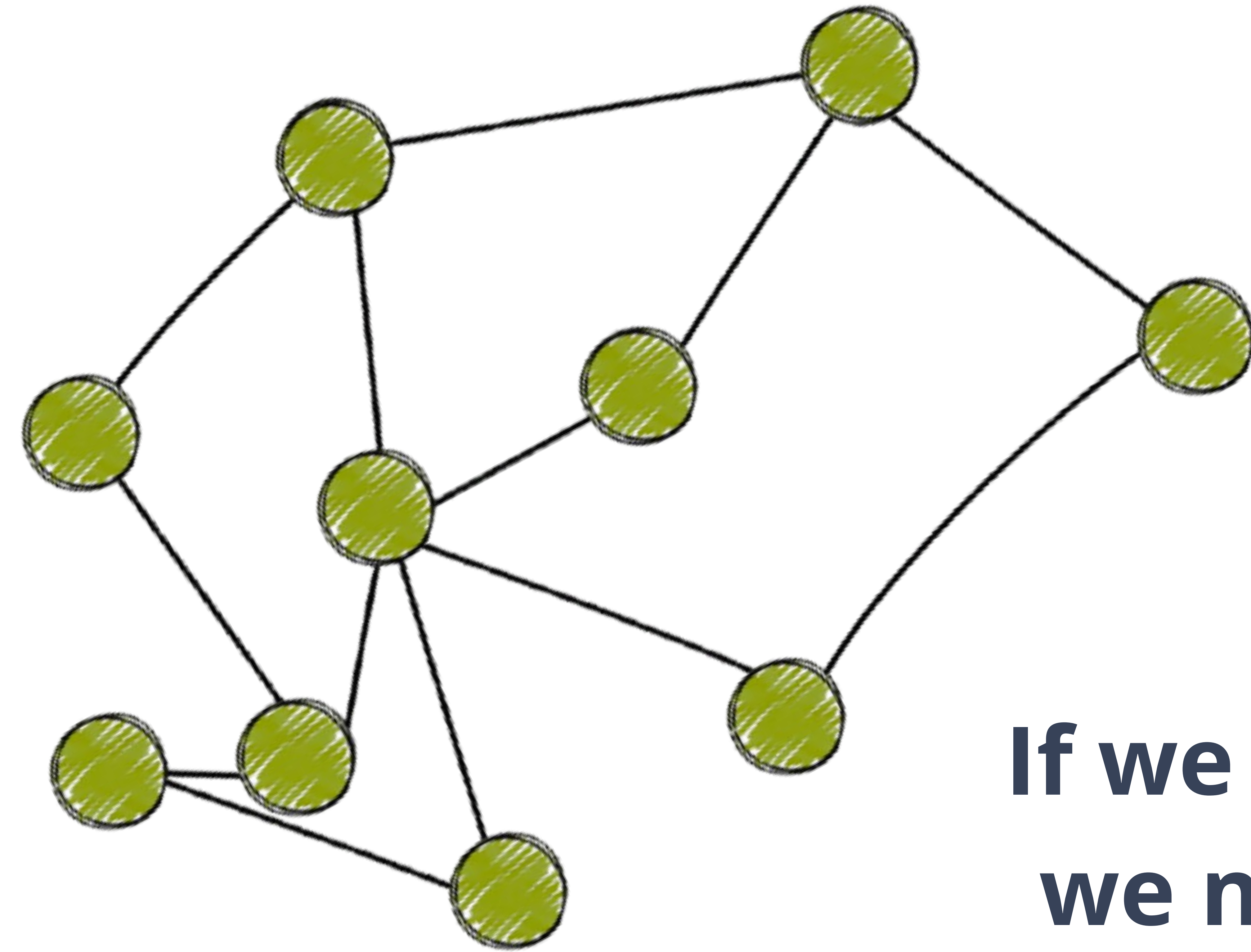
Designing Learning for Systems Change

Learning Design | Training | Strategic Partnerships

How can we move from...

Problems → *Possibilities?*

Awareness → *Informed Action?*



If we want systems change,
we need to **teach** systems
thinking.



Ready, Willing and Able?

Accelerating the development of sustainability competencies through learning

January 2024



Produced by
**PROJECT
EVERYONE**



1

Guidelines for Excellence **K-12 Environmental Education**

For educators, administrators, policy makers, and the public



Greening curriculum

guidance

Teaching and learning for climate action



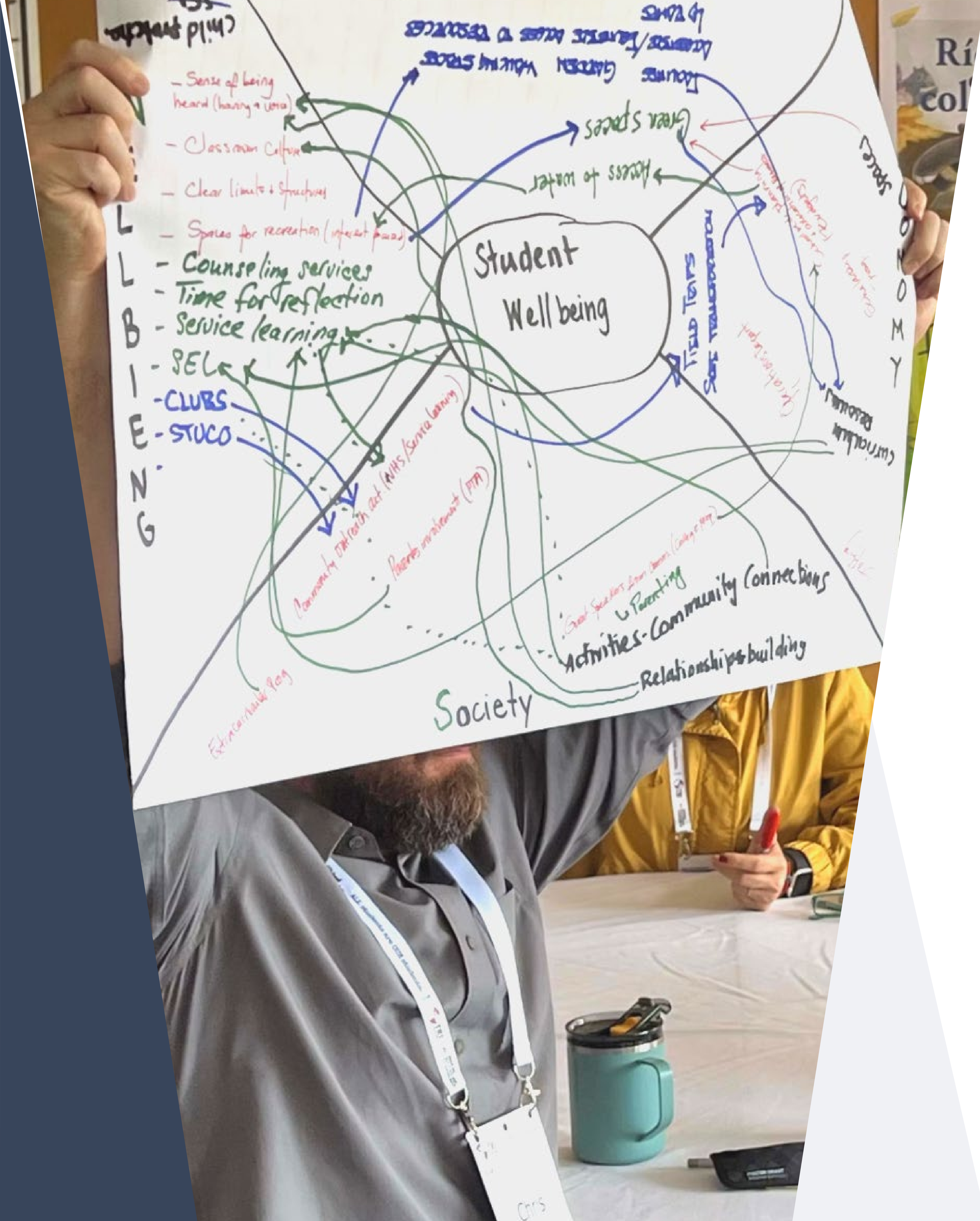
Why think in systems?

Systems thinking helps students see the big picture. It shows how things connect, how change happens, and where their actions matter.

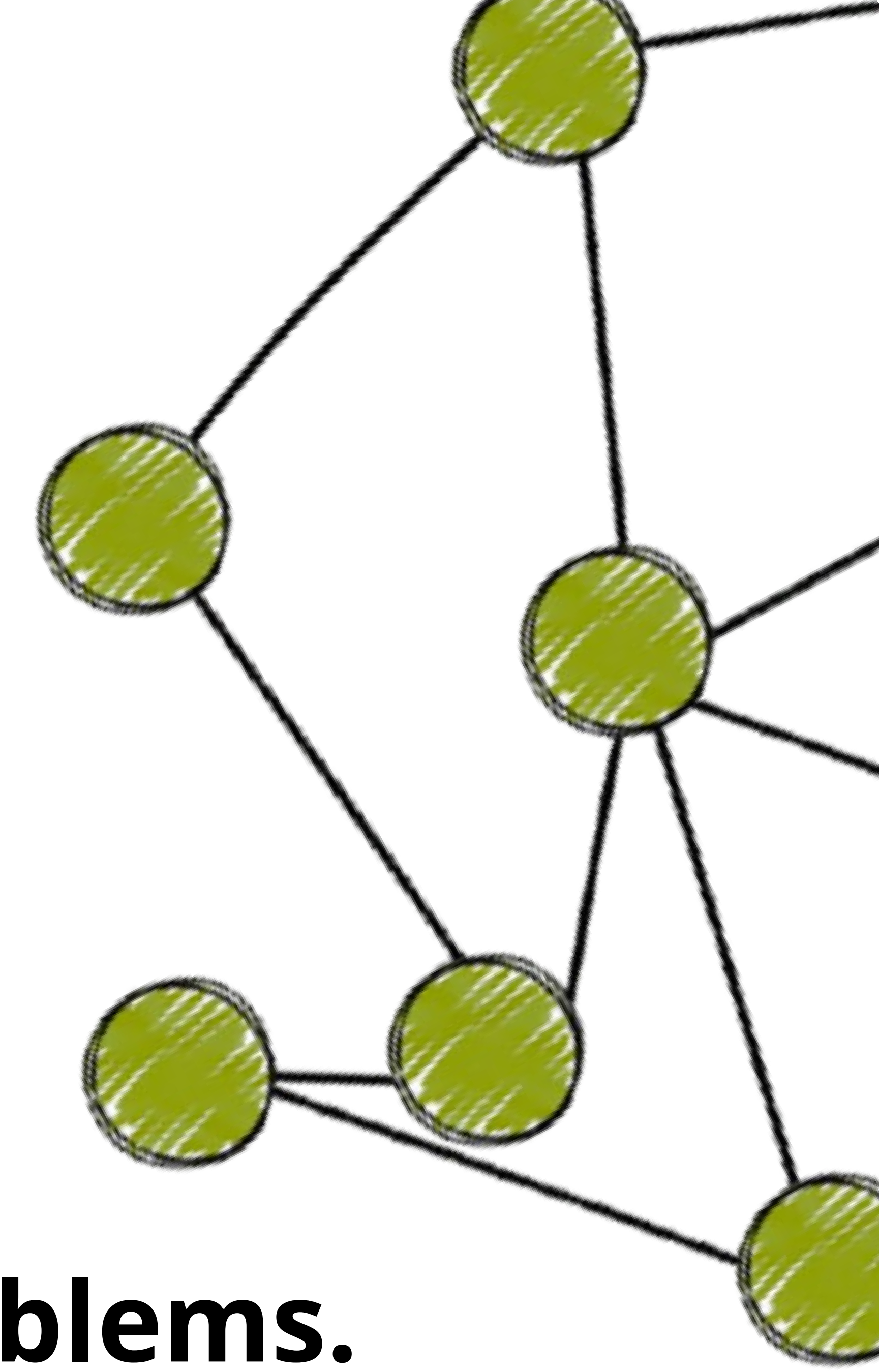
Rather than memorizing content or reacting to events, learners explore the deeper patterns and structures that shape our world.

They develop the tools to design solutions, consider long-term effects, and collaborate with others.

This shift does not just support sustainability. It transforms how students think and learn.



3 Takeaways



1. **Every problem lives inside a **system**.**
1. **Tools** can help learners navigate complex problems.
1. **Designing learning for action takes **intention**.**



What **environmental issues** are you working to address?

Takeaway 1:

Every problem lives inside a **system**.

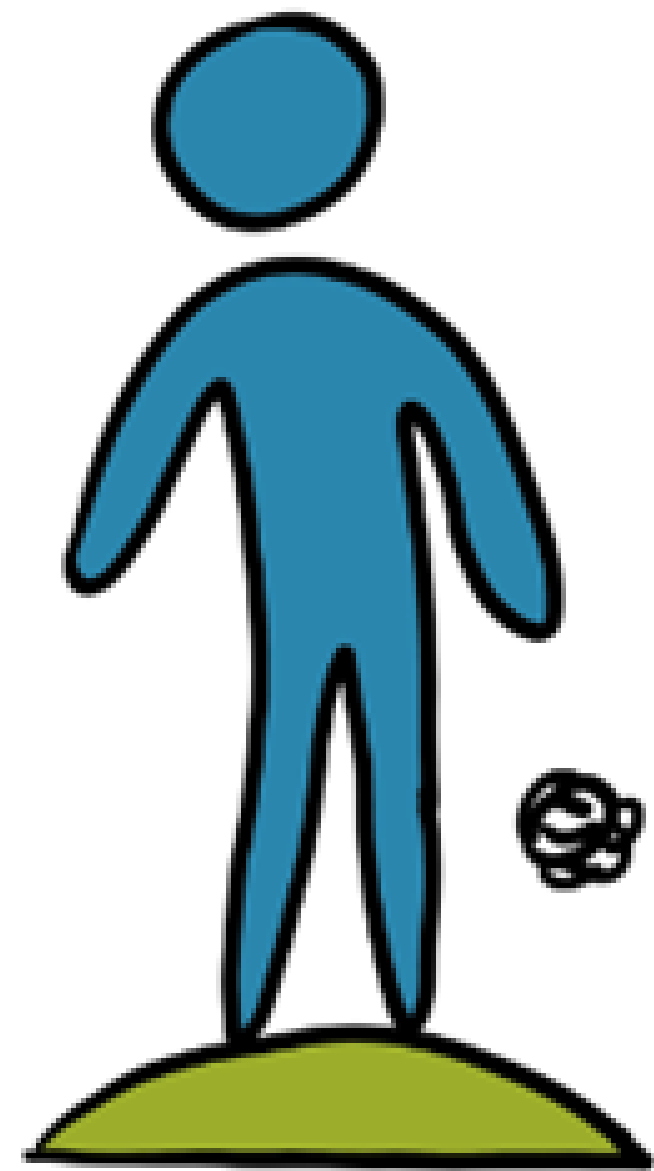
Environmental Issues Are Systemic



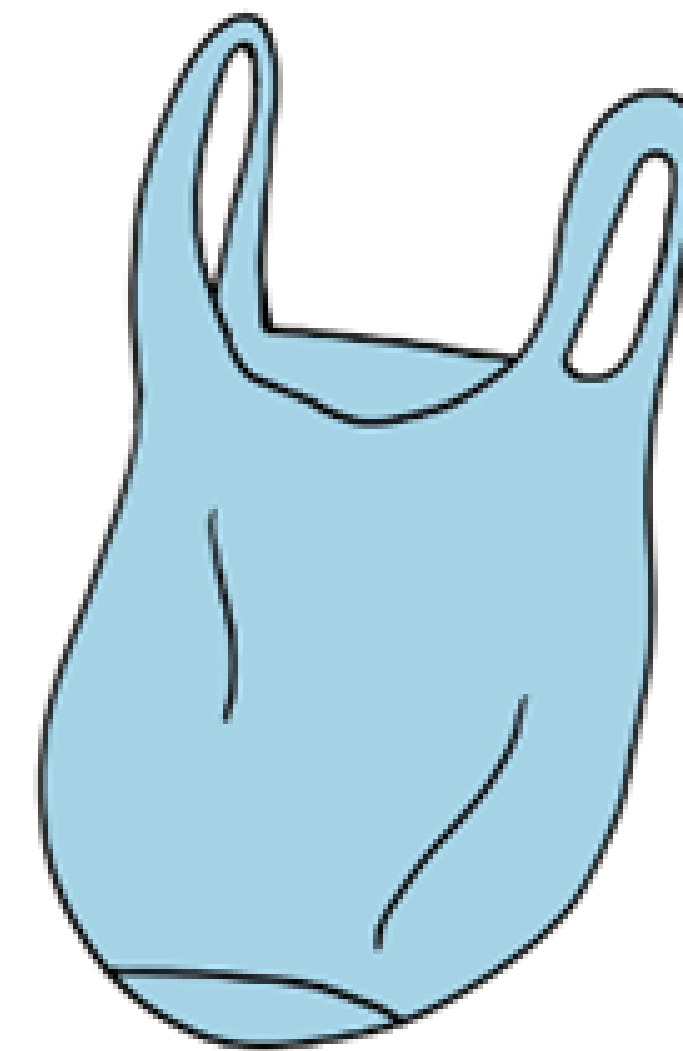


Teaching *Topics*

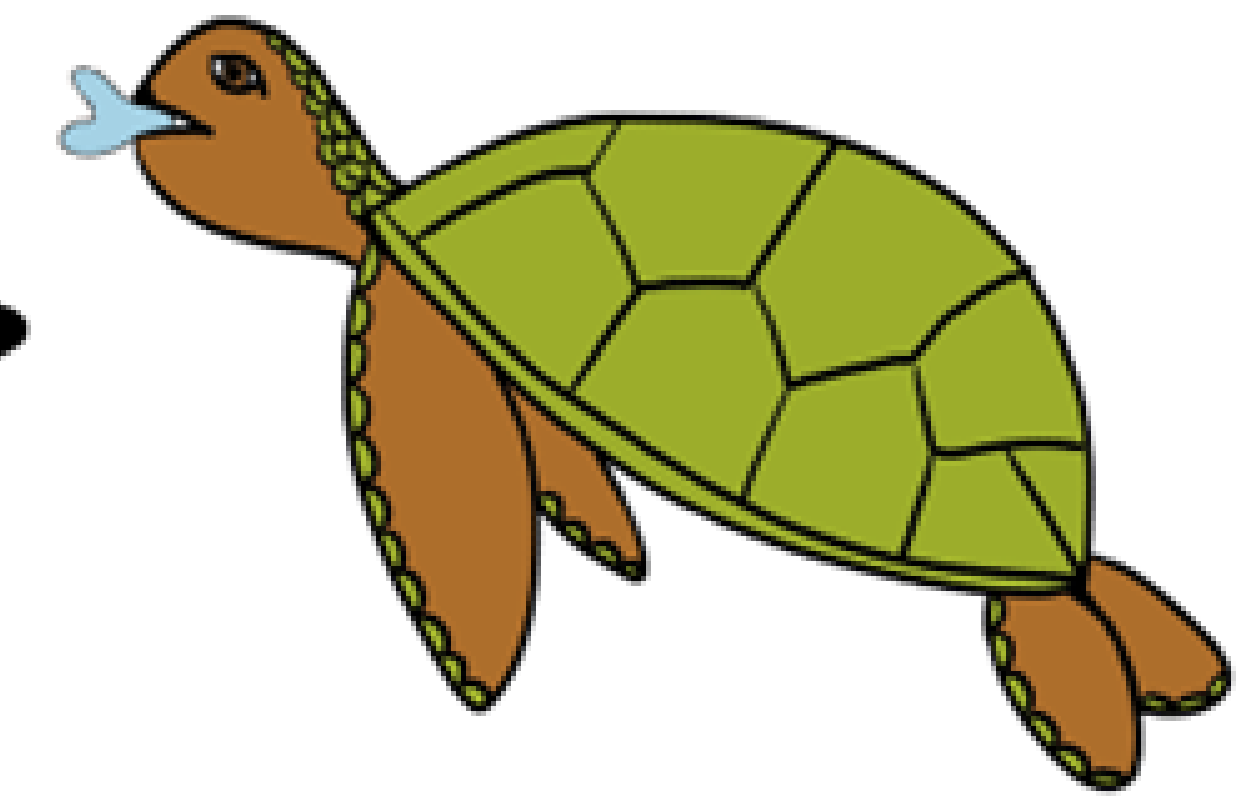
E.g. Marine Plastic Pollution



Someone litters



plastic litter

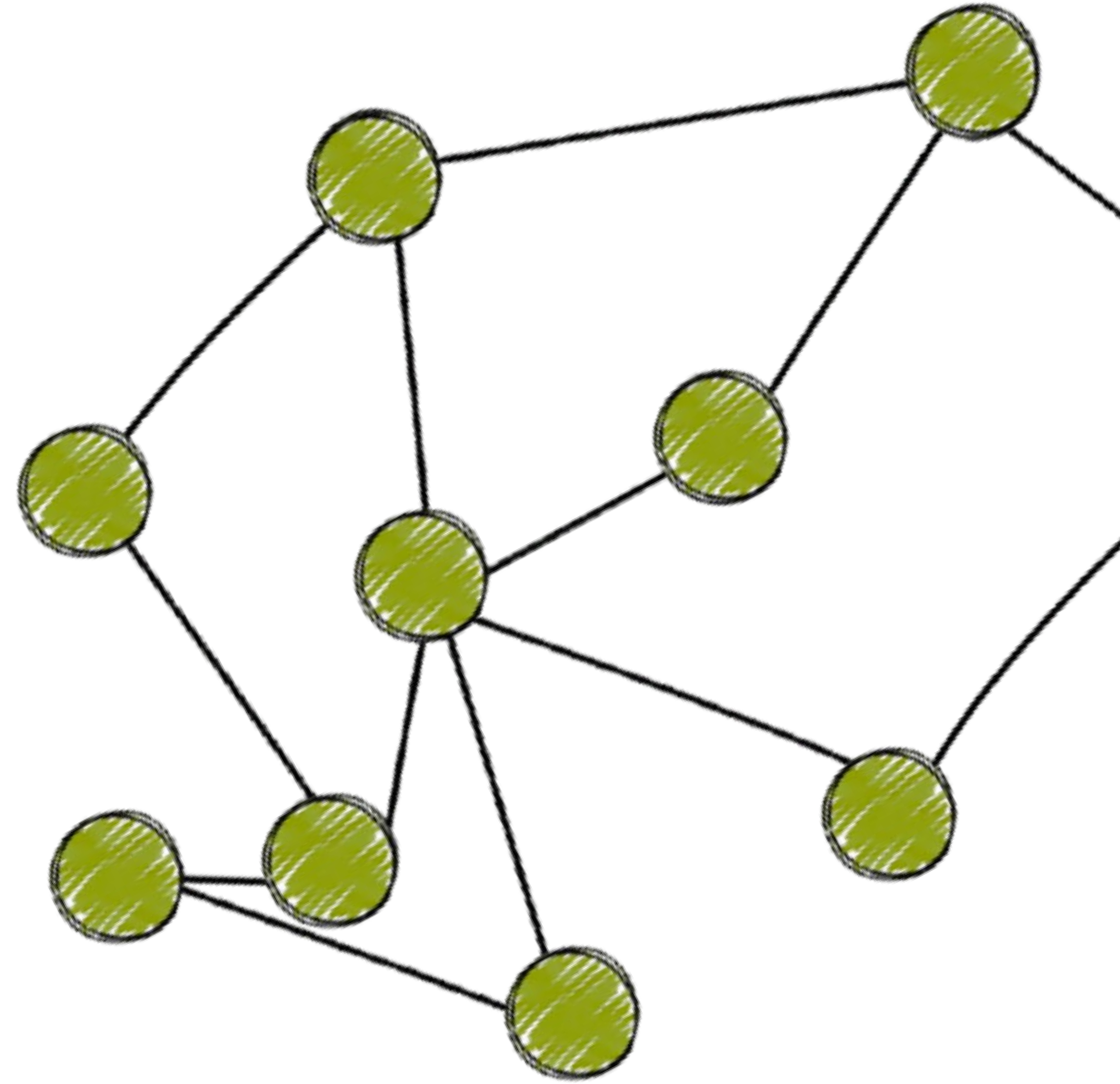


wildlife eats plastic

What is Systems Thinking?

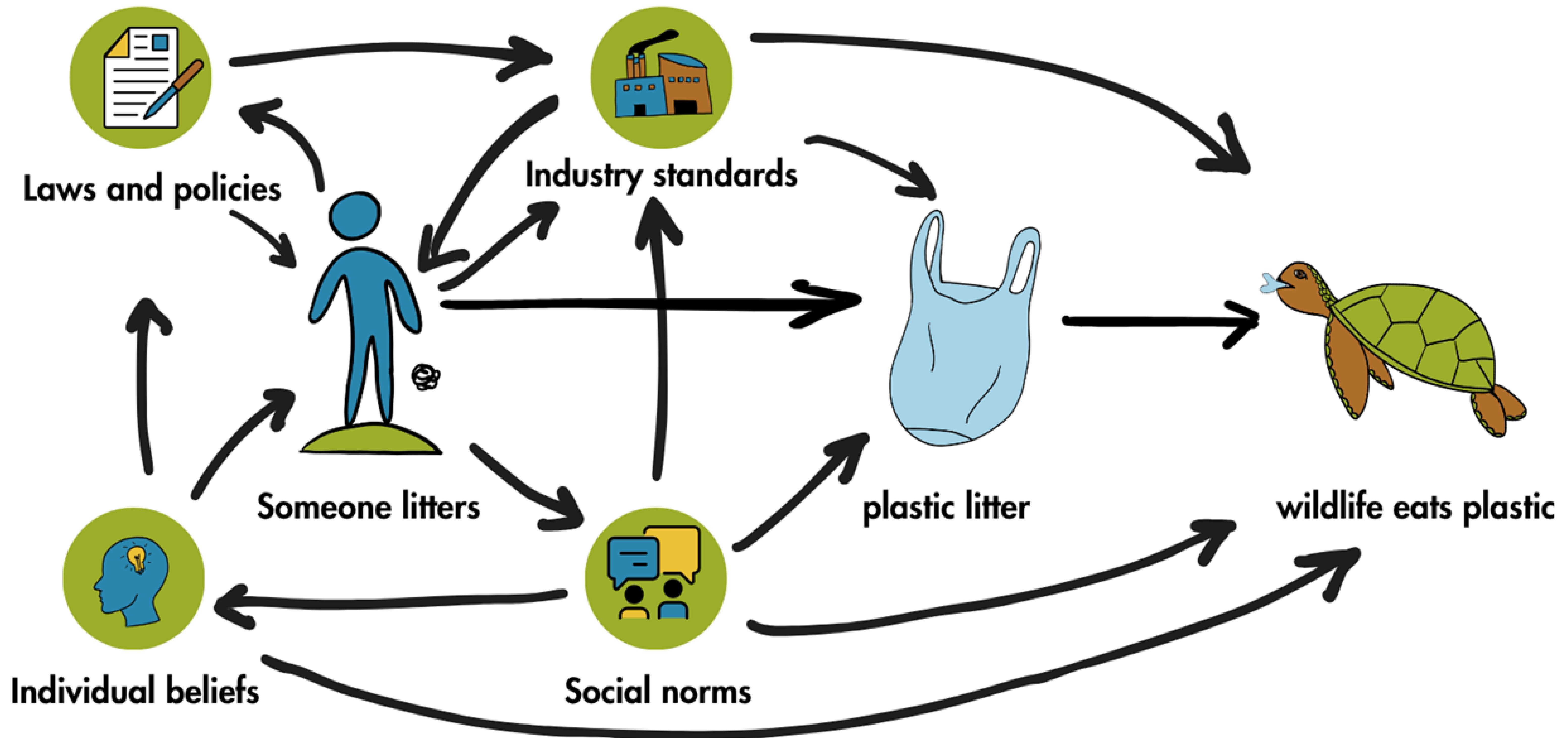
“Systems thinking is a **discipline for seeing wholes**. It is a framework for seeing **interrelationships** rather than things, for seeing **‘patterns of change’** rather than static ‘snapshots’.”

-Peter Senge, The Fifth Discipline



Teaching *Systems*

E.g. Causes & Effects of Single-Use Plastic





Think of one topic you teach. What's one **root cause or relationship** that learners rarely see?

Takeaway 2:

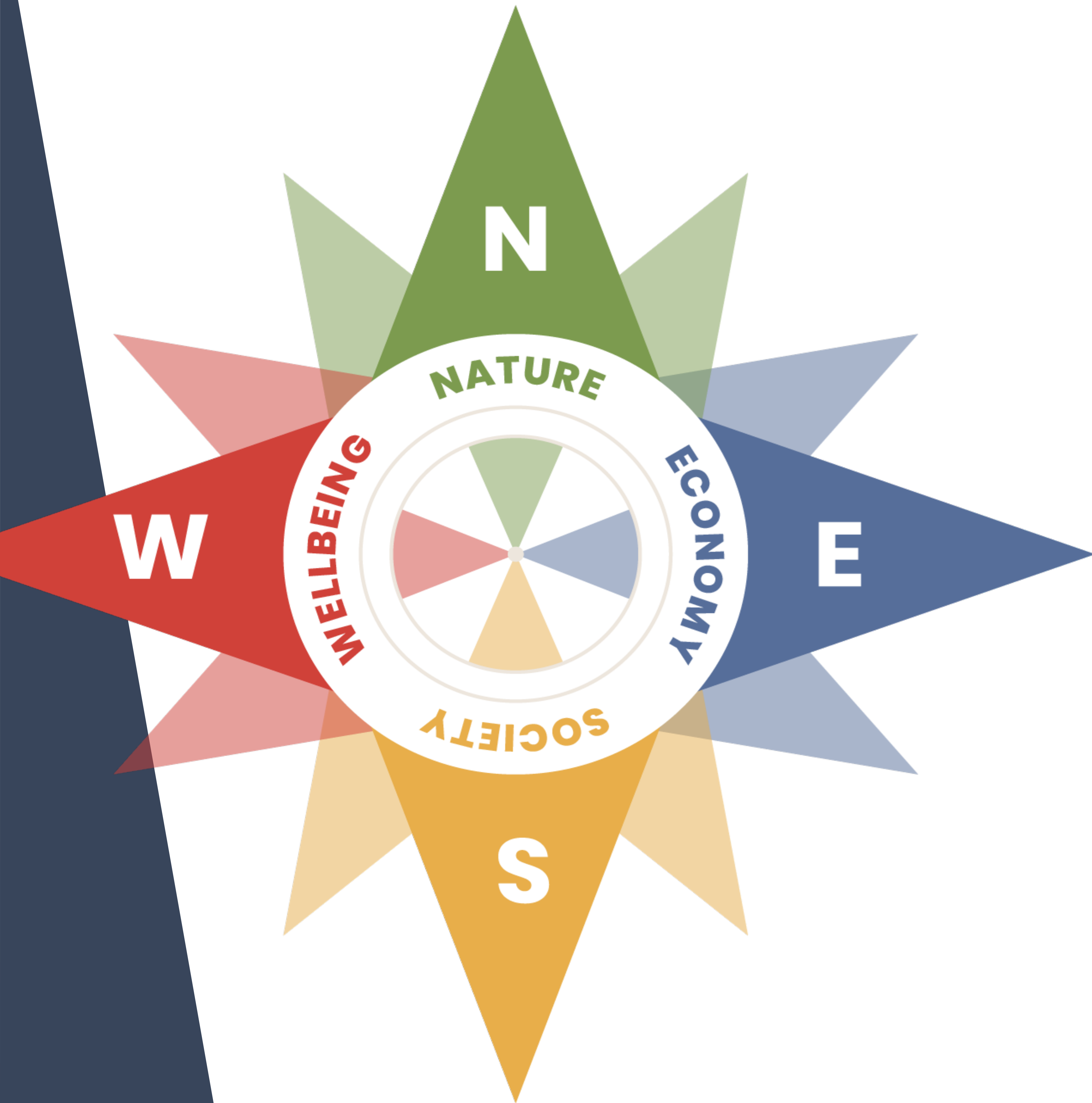
Tools help learners
navigate complex problems.

The Sustainability Compass

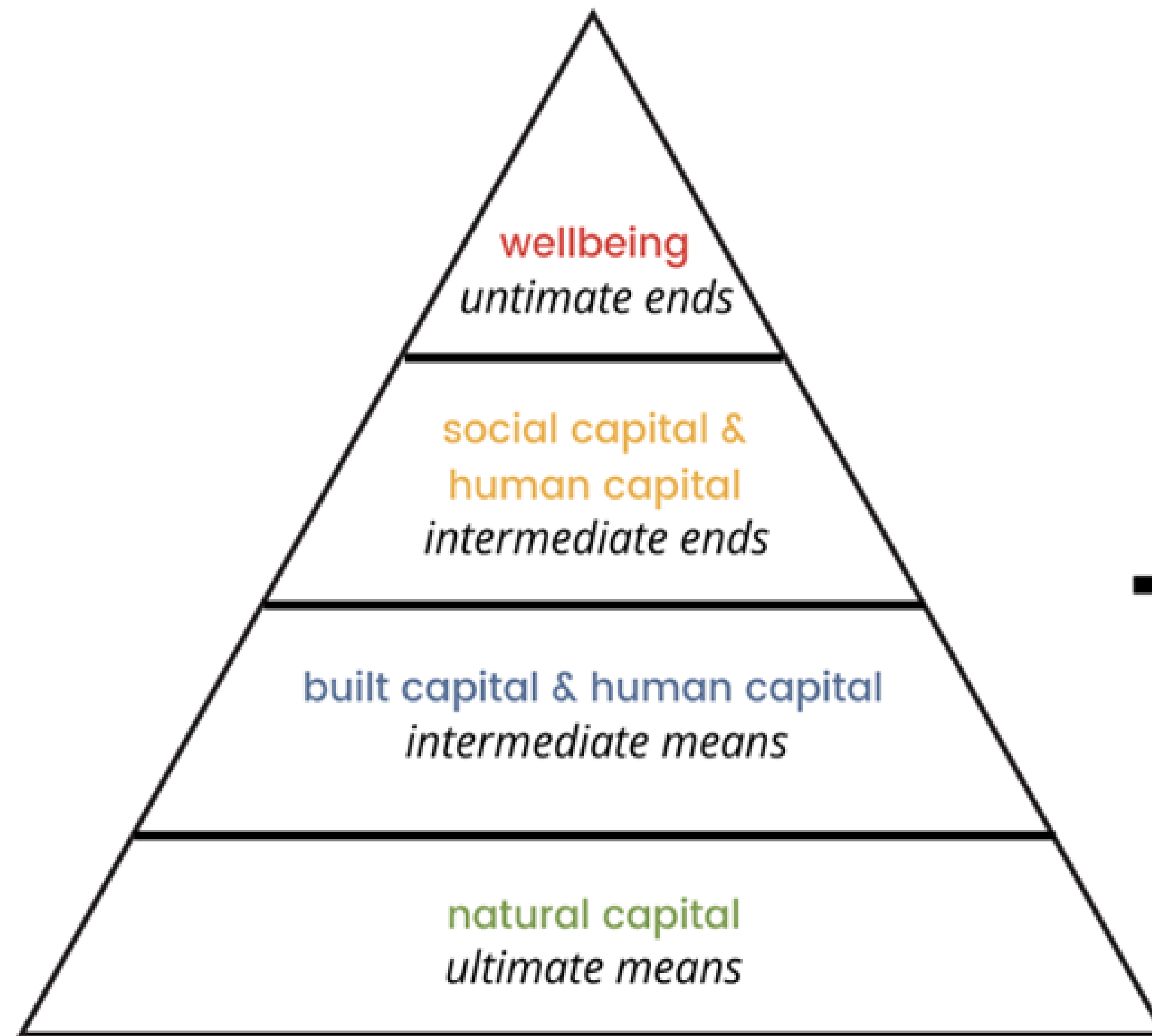
The Sustainability Compass is a simple yet powerful tool that frames sustainability through four interconnected lenses: **Nature**, **Economy**, **Society**, and **Wellbeing**.

This shared language helps schools connect learning across subjects, link decisions to sustainability, and support action at every level of the community.

Whether used in curriculum planning, student inquiry, or whole-school strategy, the Compass brings clarity and alignment to sustainability thinking.



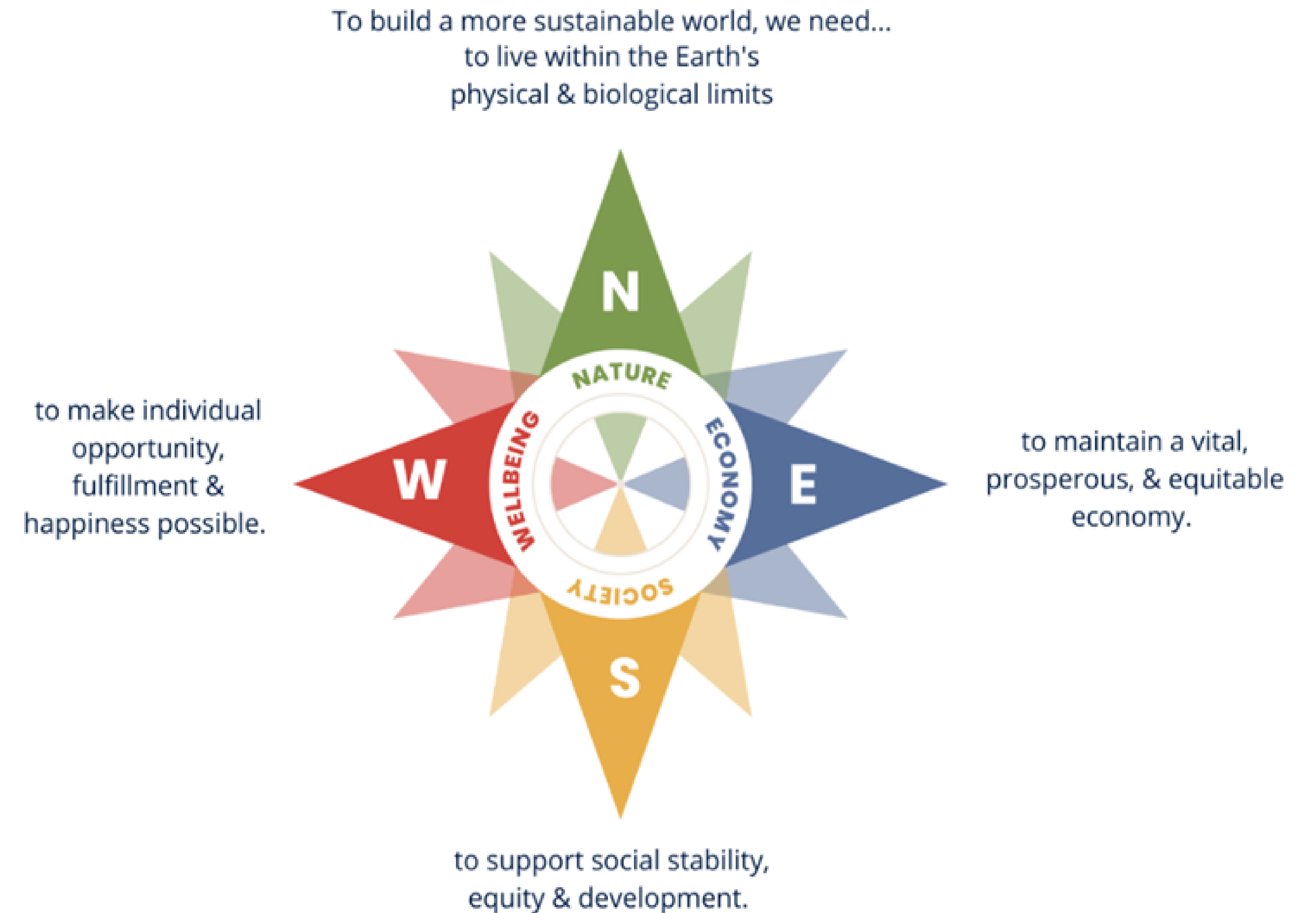
Herman Daly's Triangle



source: Indicator and Information Systems for Sustainable Development, a report to the Balaton Group 1998 by Donella Meadows

The Daly Triangle is a sustainability framework that explicitly links the concepts of the triple bottom line, the hierarchy of human needs, and the different forms of capital.

AtKisson's Sustainability Compass



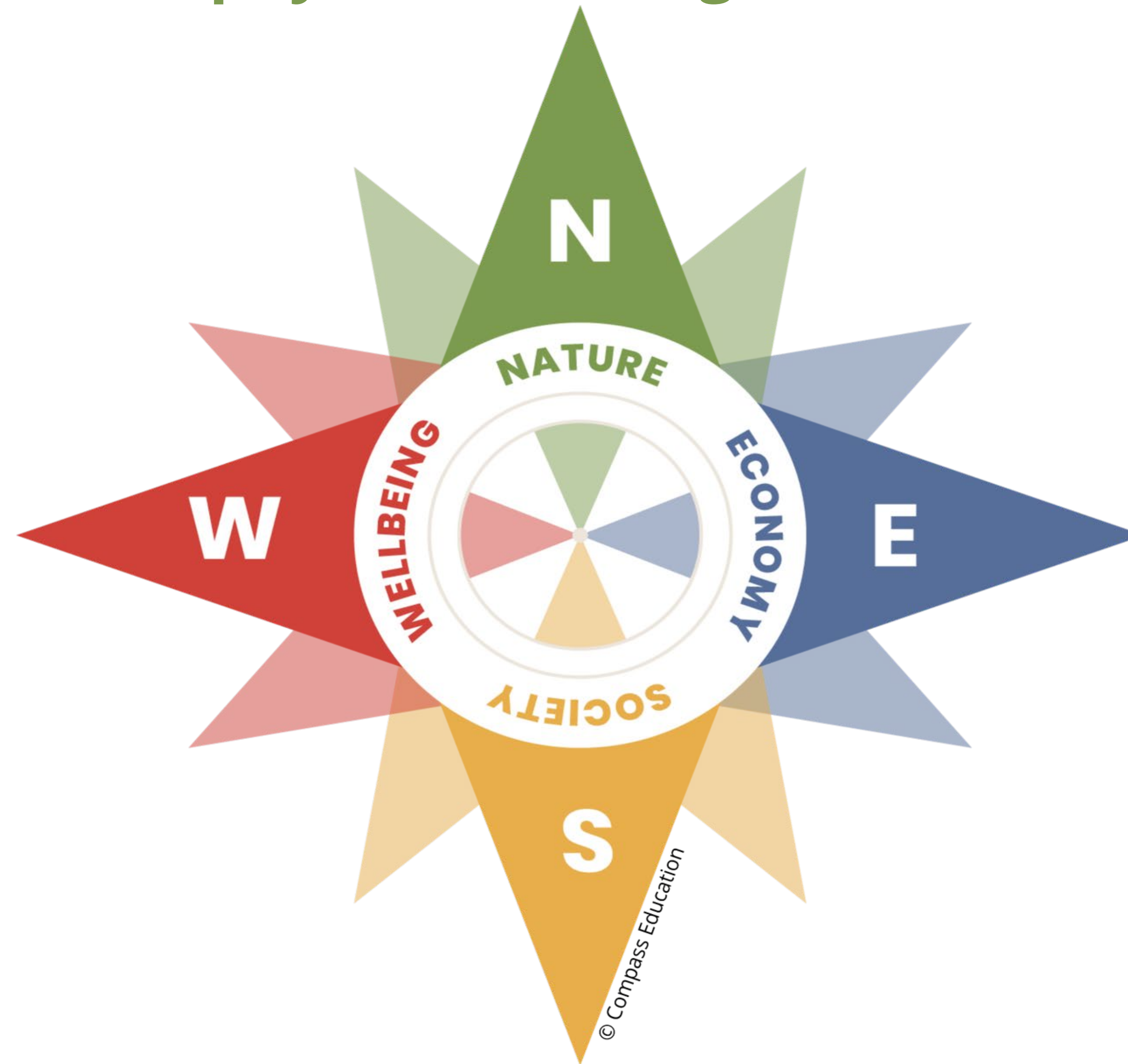
Donella Meadows
MIT Scientist
Author of "Limits to Growth"



Alan AtKisson
Developer of the Sustainability
Compass

To achieve a sustainable world, we must...

...live within the Earth's
physical & biological limits



...make individual
opportunity, fulfillment
& happiness possible

...maintain a vital,
prosperous &
equitable economy

...support social stability,
equity & development

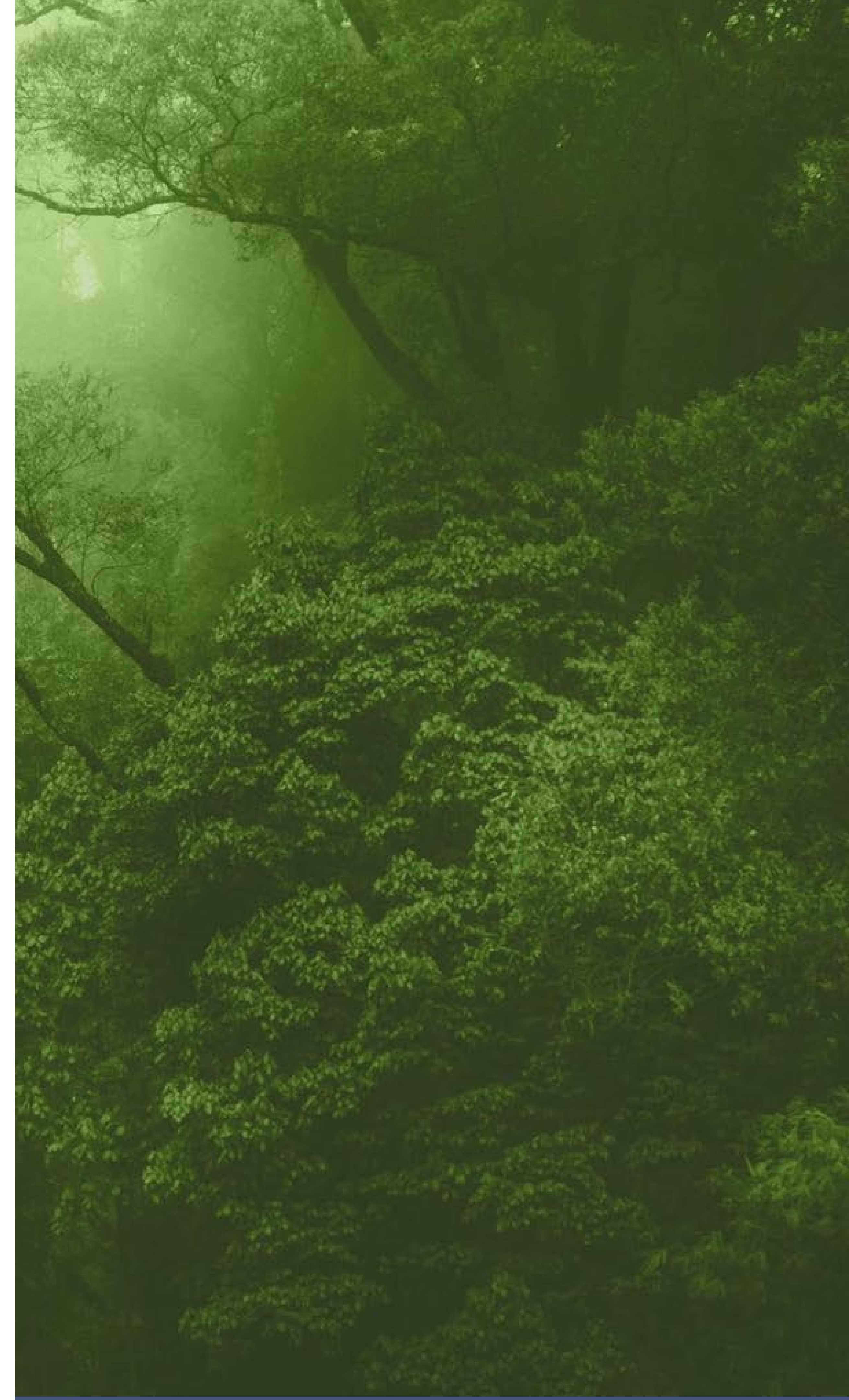
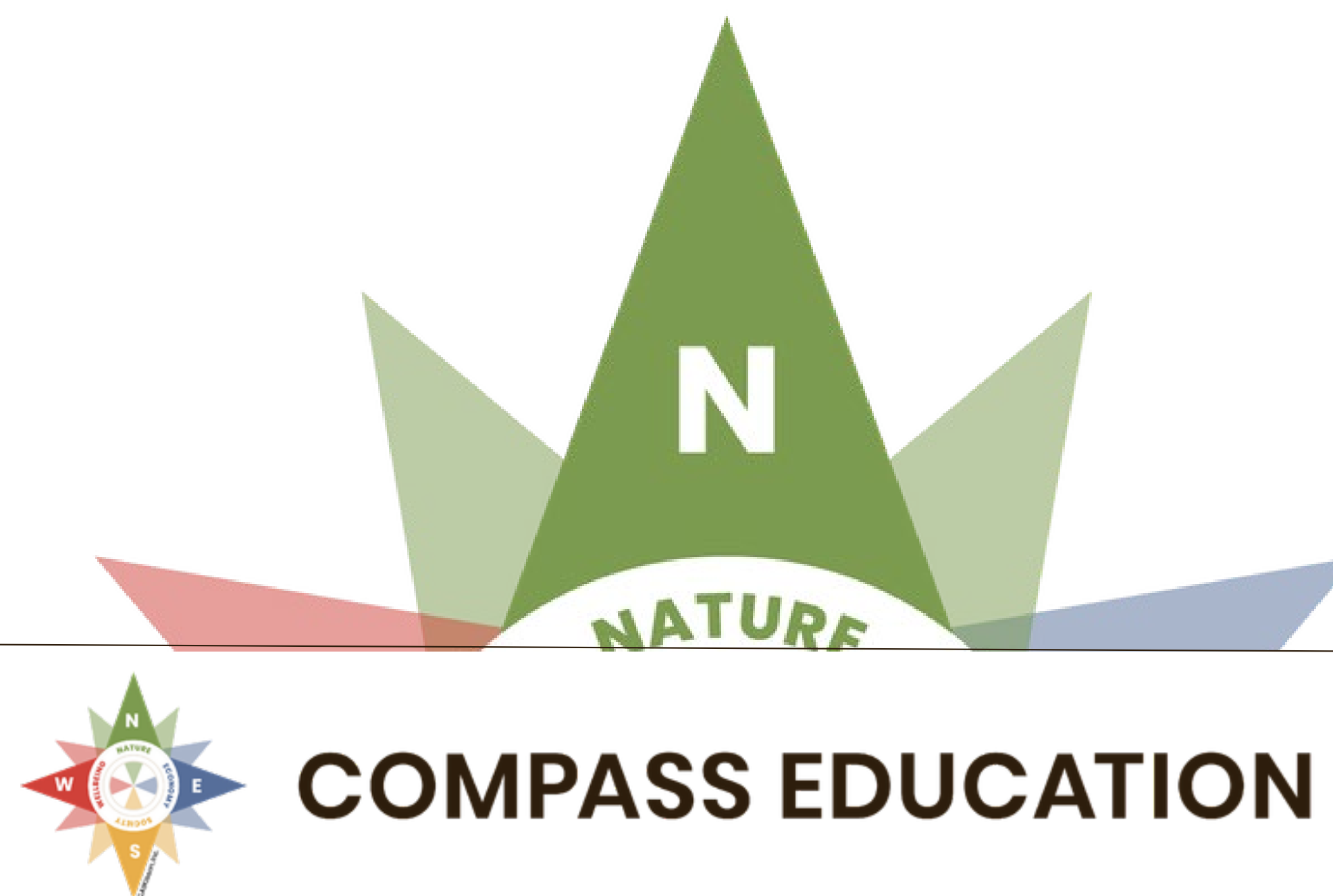
NATURE

—*The natural systems on which all life depends.*

To build a more sustainable world, we need to live within the Earth's physical & biological limits.

Consider things like:

- Aesthetics & Beauty
- Environmental Awareness
- Environmental Compliance
- Pollution
- Climate Change
- Waste Management
- Resource Use & Consumption
- Biodiversity
- Habitat Disruption
- Ecosystem Services



ECONOMY

—*The economic systems that provide for humanity.*

To build a more sustainable world, we need to maintain a vital, prosperous and equitable economy.

Consider things like:

- Production & Consumption
- Goods & Services
- Markets
- Jobs & Wages
- Investments
- Supply Chains
- Profits & Expenses
- Reputation & Image
- Innovation
- Product differentiation



SOCIETY

—Our social systems and institutions.

To build a more sustainable world, we need to support social stability, equity and development.

Consider things like:

- Governance
- Education (Access & Quality)
- Social Cohesion
- Social & Cultural Institutions
- Social & Public Services
- Human Rights
- Equity & Equality
- Diversity
- Social Norms
- Public Opinion



COMPASS EDUCATION



WELLBEING

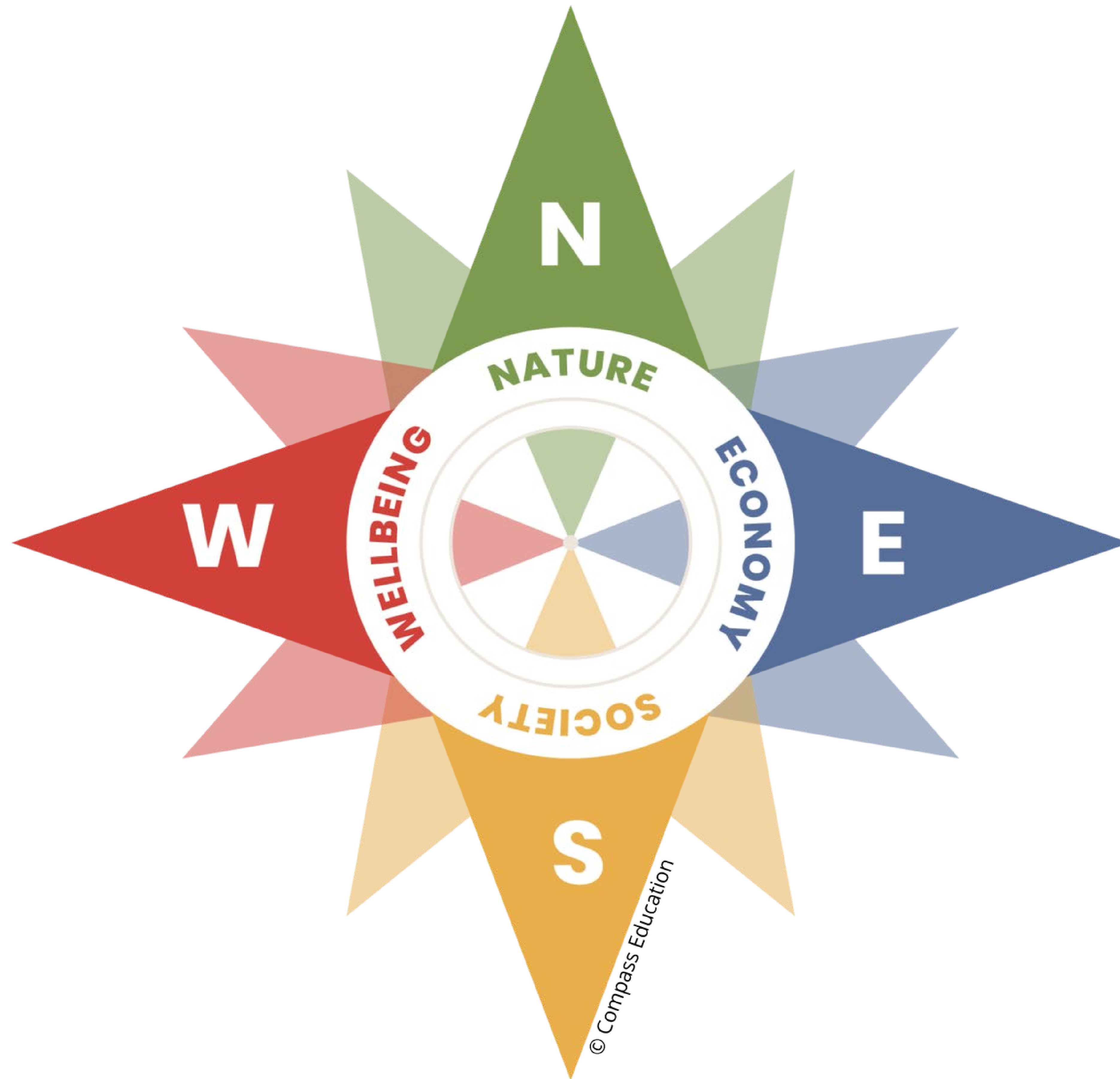
—Individuals like you and me.

To build a more sustainable world, we need to make individual opportunity, fulfillment and happiness possible.

Consider things like:

- Individual Health
- Personal Development
- Primary Relationships
- Personal Satisfaction
- Fulfillment of Potential
- Spiritual Enrichment
- Quality of Life
- Sense of Security & Safety
- Happiness





“All education is environmental education.”

**-David Orr ,“What Is Education For?”
(1991)**

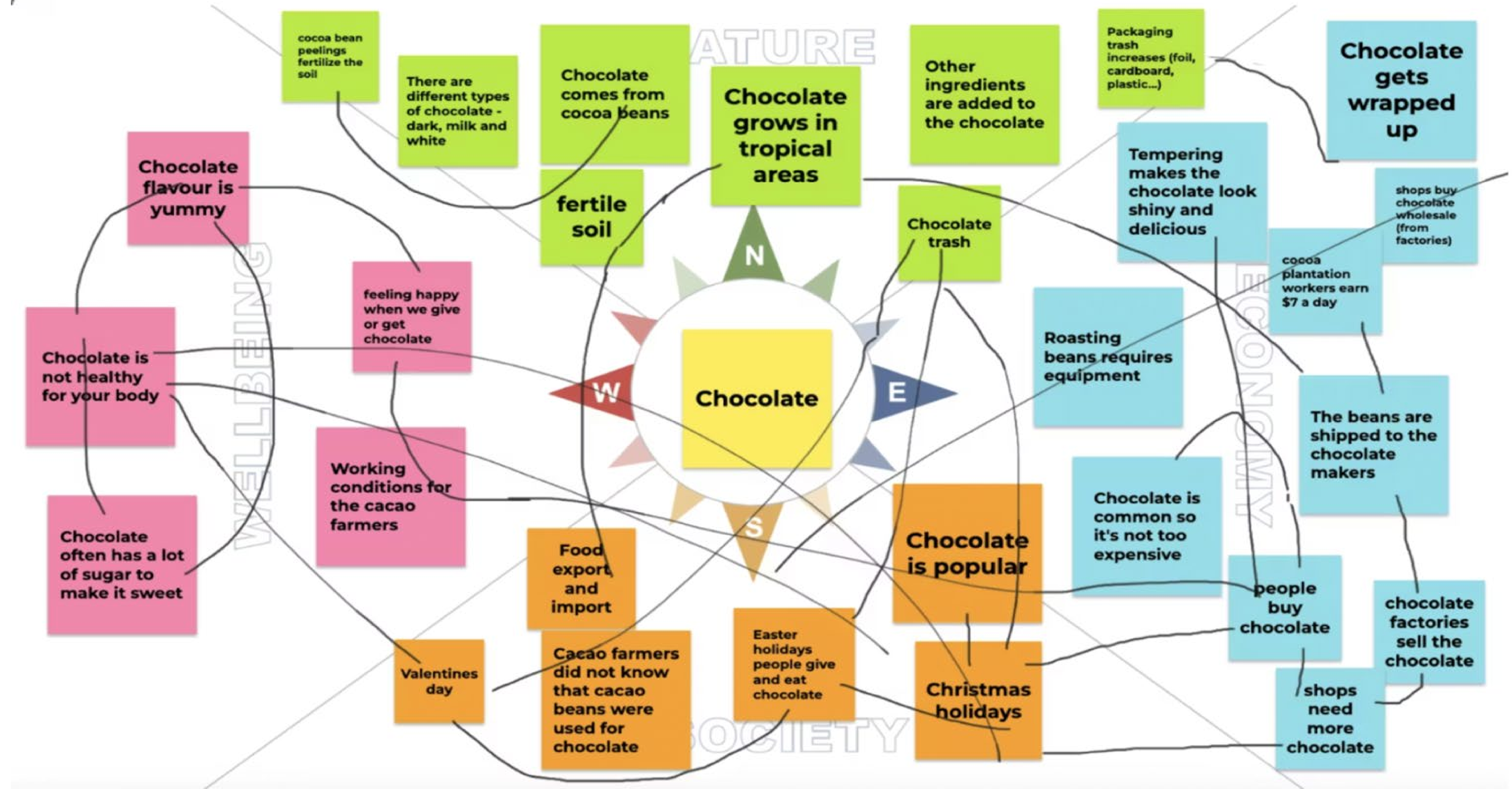


Compass Point

What ideas or thoughts do you have about **chocolate** as they relate to Nature, Economy, Society or Wellbeing.

Add a note to the chat with the Compass Point your idea most aligns with.

The Sustainability Compass - 1st grade

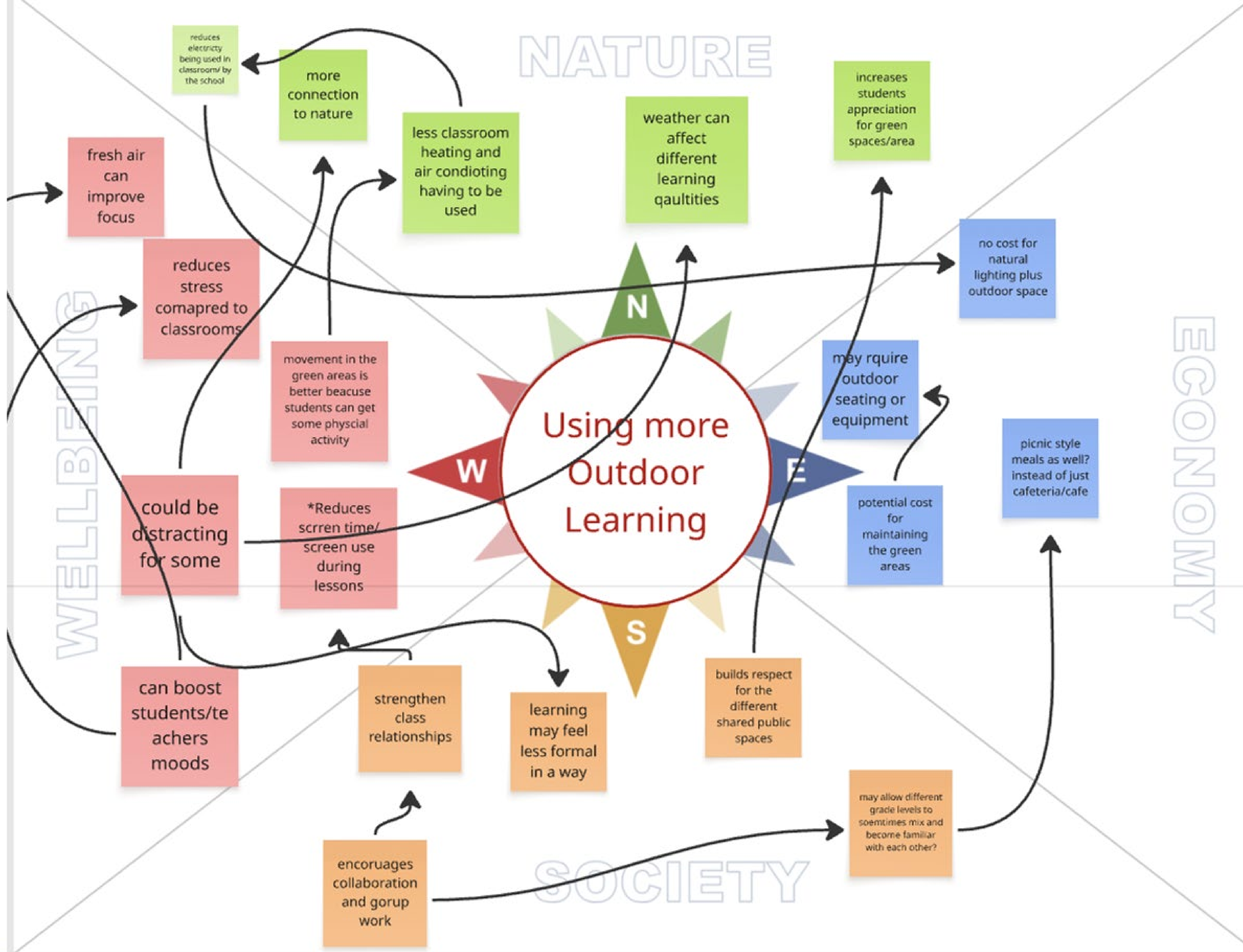




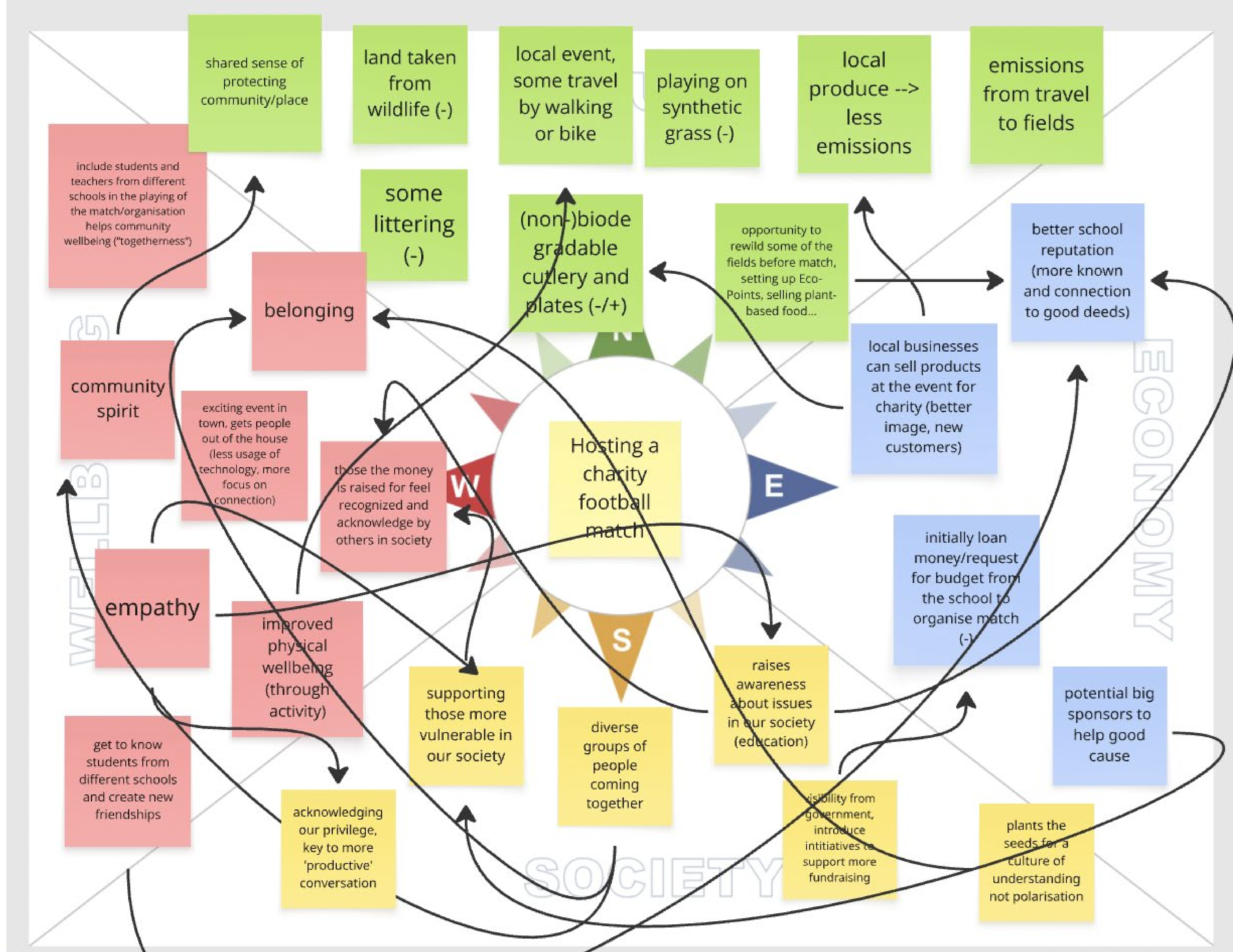
Compass Point

What ideas or thoughts do you have about **Outdoor Education** as they relate to Nature, Economy, Society or Wellbeing.

Add a note to the chat with the Compass Point your idea most aligns with.



Students from the International School of Dusseldorf



Students from the International School of Dusseldorf

Finding the P.A.T.H. from Awareness to Agency

- **P** Pick your focus
- **A** Add ideas- questions, observations, & thoughts
- **T** Think analytically- make connections
- **H** Find Hubs - and consider action

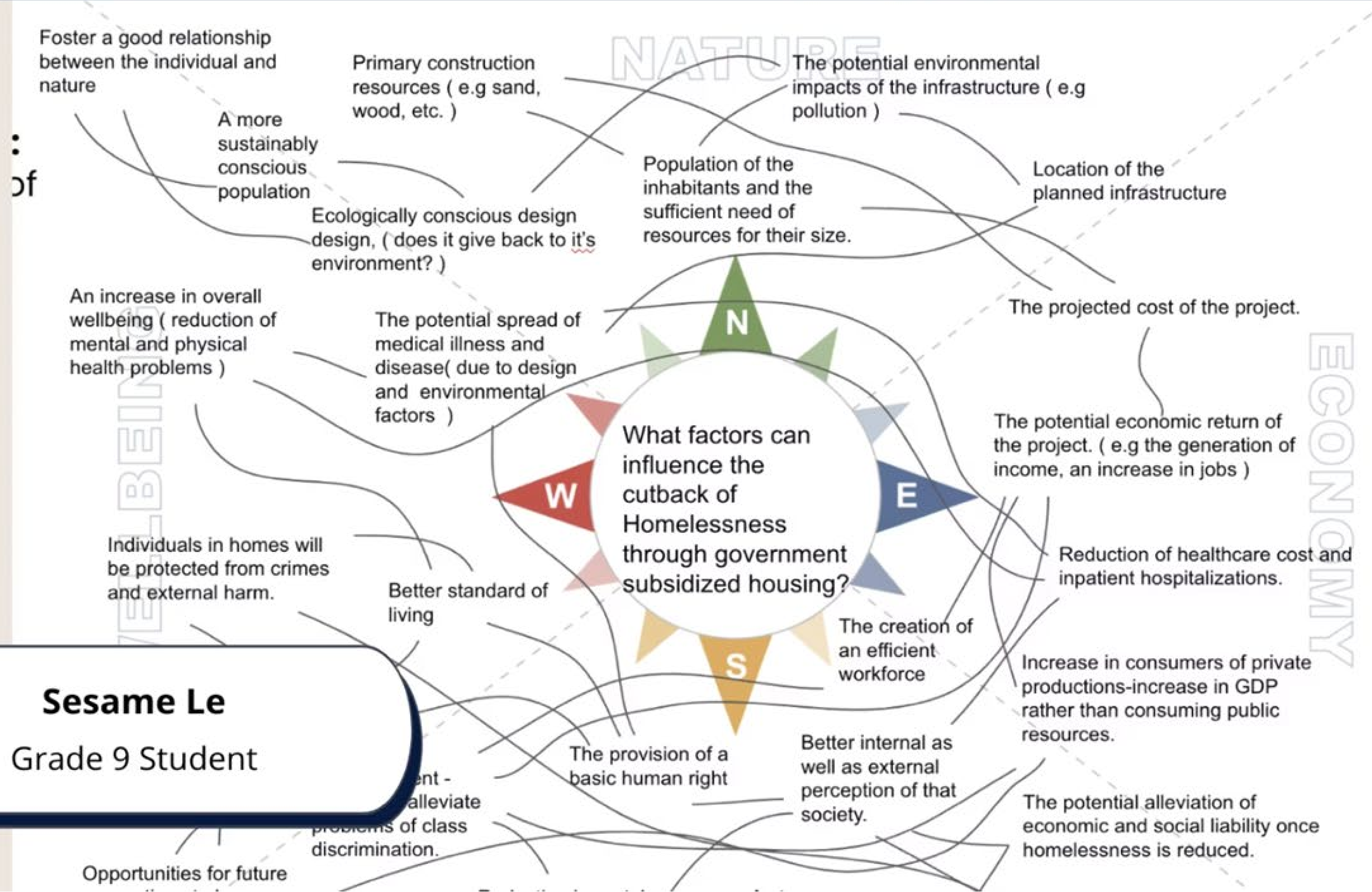


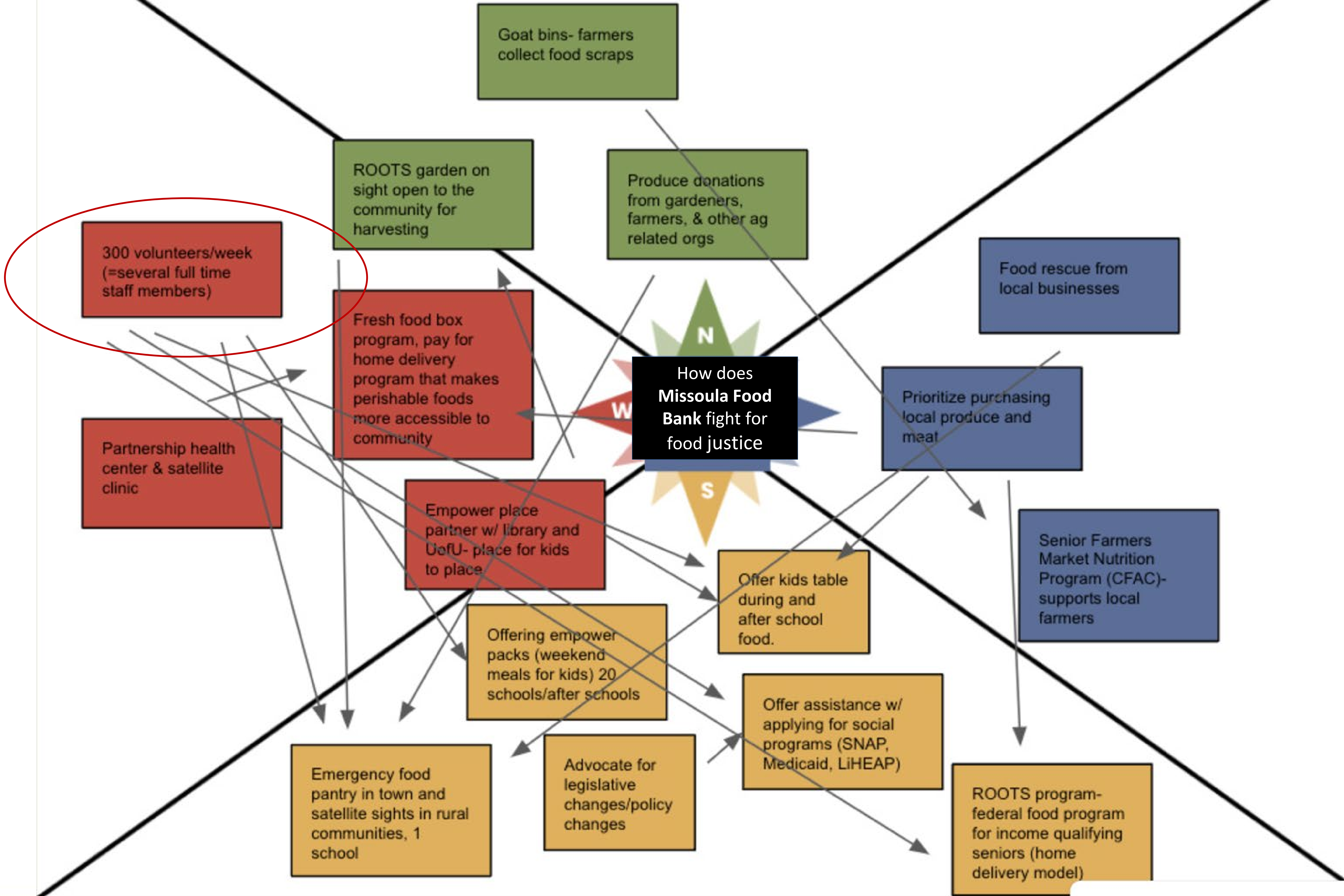
Homelessness & Government Subsidies Debate

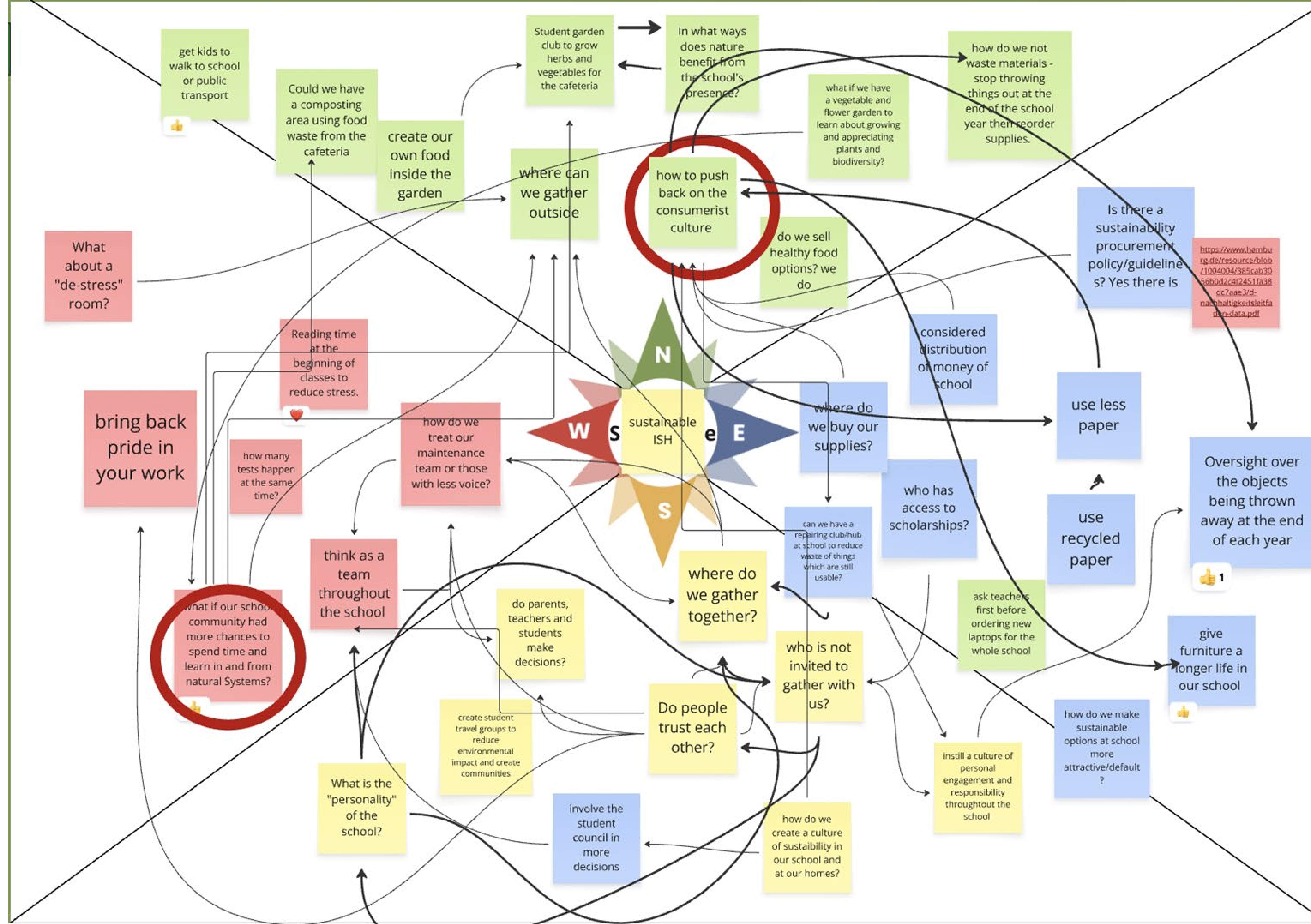
Compass Youth Ambassador Training

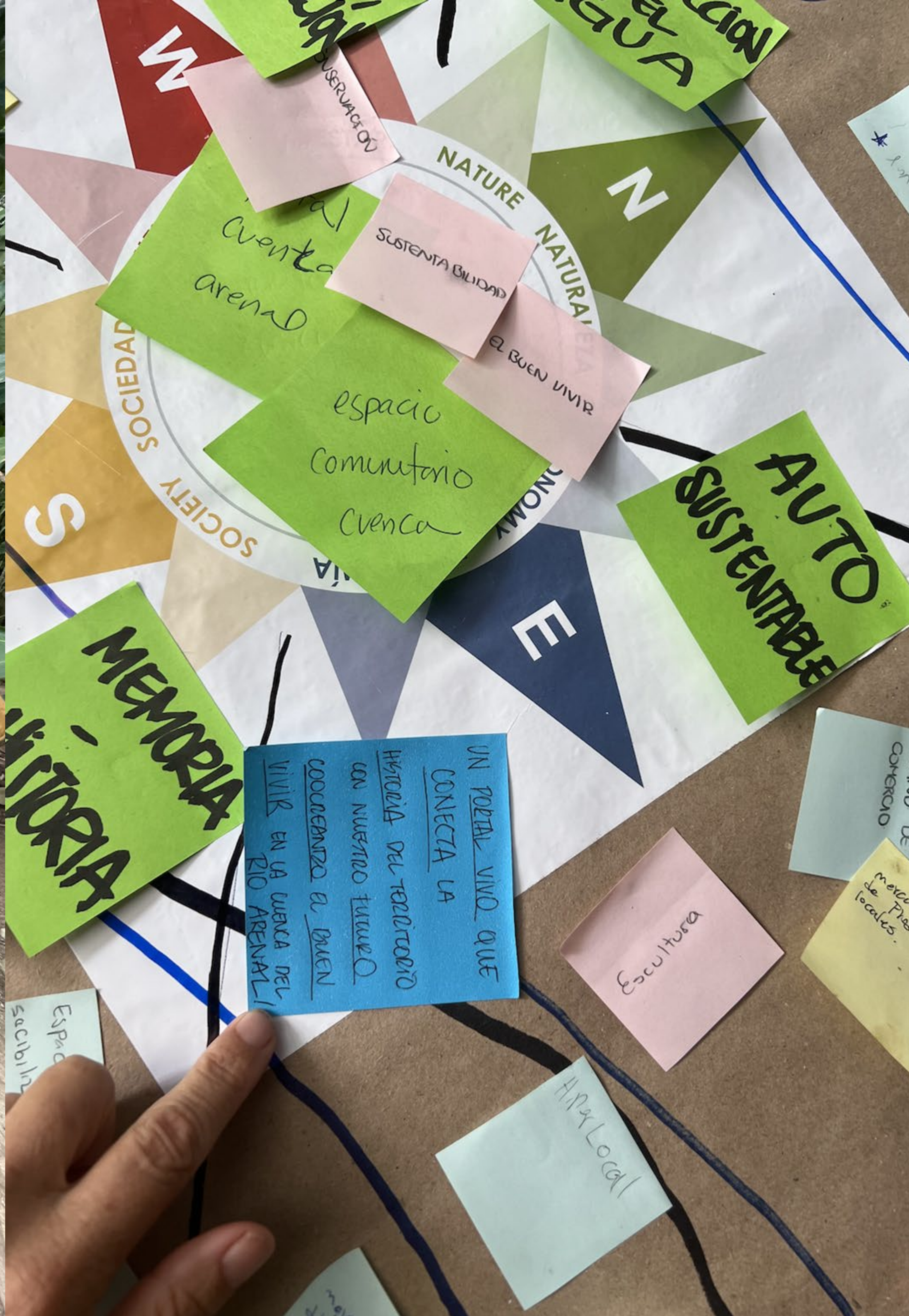


Sesame Le
Grade 9 Student









How can the Compass be used in your practice?



- Gathering background knowledge or generating questions for research
- Interview/engage community members
- Explore multiple perspectives and points of view (including one's own)
- Discover new and different opportunities for impact

THE COMPASS TOOLKIT



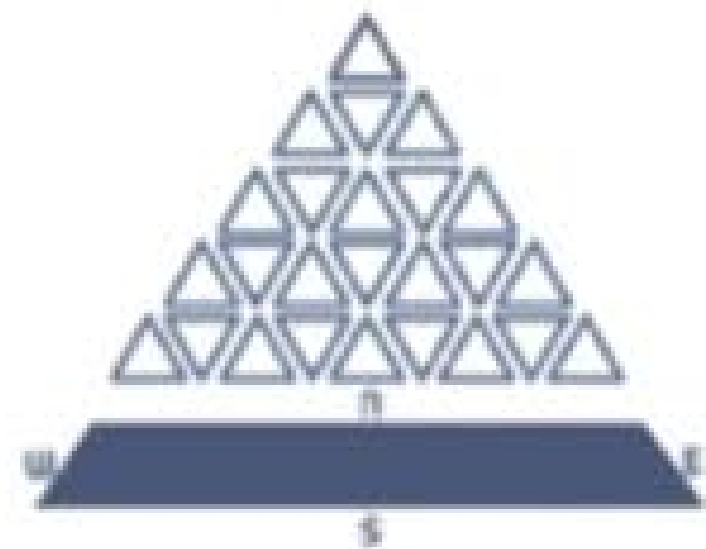
Sustainability Compass

The Sustainability Compass is a simple tool that brings people together around a common understanding of sustainability, and a shared vision for getting there. It uses the standard N,E,S,W to represent the four required considerations for sustainable outcomes (Nature, Economy, Society, Wellbeing)



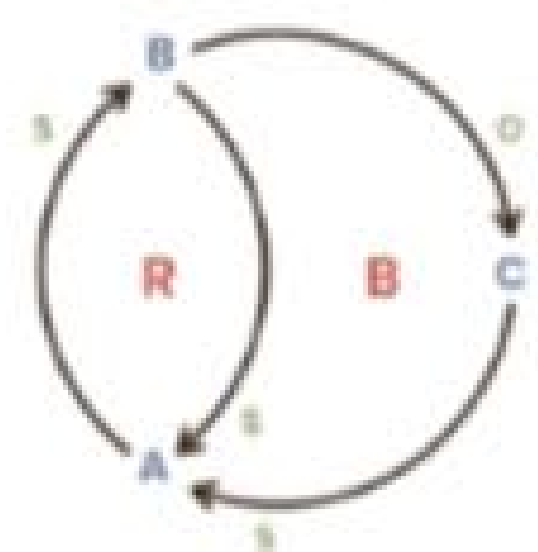
Systems Iceberg

A systems thinking tool designed to help an individual or group discover the patterns of behavior, supporting structures, and mental models that underlie a particular event.



ISIS Pyramid

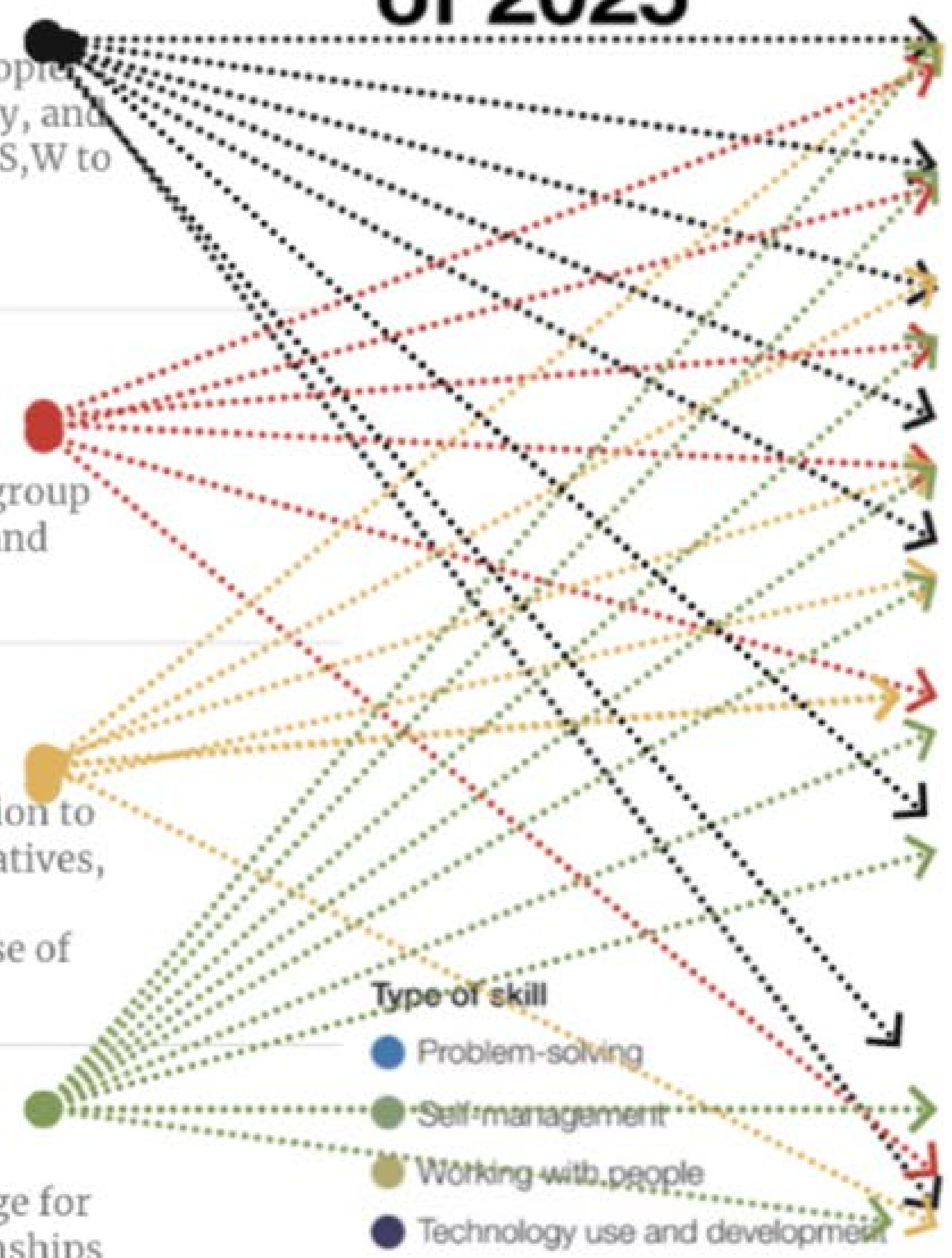
The pyramid process is an interactive role-play introduction to sustainable development and useful for creating new initiatives, projects, visions, or strategies, as it facilitates a multi-stakeholder process for building consensus around a course of sustainable action.



Systems Thinking Tools

Systems thinking is a way of thinking about, and a language for describing and understanding, the forces and interrelationships that shape the behavior of systems. Using systems thinking approaches in the classroom creates students who can see from another perspective and look deeper and ask different questions about why things happen and what we can do about them.

Top 10 skills of 2025



- Type of skill
- Problem-solving
 - Self-management
 - Working with people
 - Technology use and development

- Analytical thinking and innovation
- Active learning and learning strategies
- Complex problem-solving
- Critical thinking and analysis
- Creativity, originality and initiative
- Leadership and social influence
- Technology use, monitoring and control
- Technology design and programming
- Resilience, stress tolerance and flexibility
- Reasoning, problem-solving and ideation

Source: Future of Jobs Report 2020, World Economic Forum.

A three-session, practical introduction to tools that will help your school:

Foster a culture of sustainability

Encourage a systems thinking perspective and practice

Prepare students and educators as powerful agents of positive change

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ASIA
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EUROPE
MAY 5, 12 & 19 (5-7 PM CEST)

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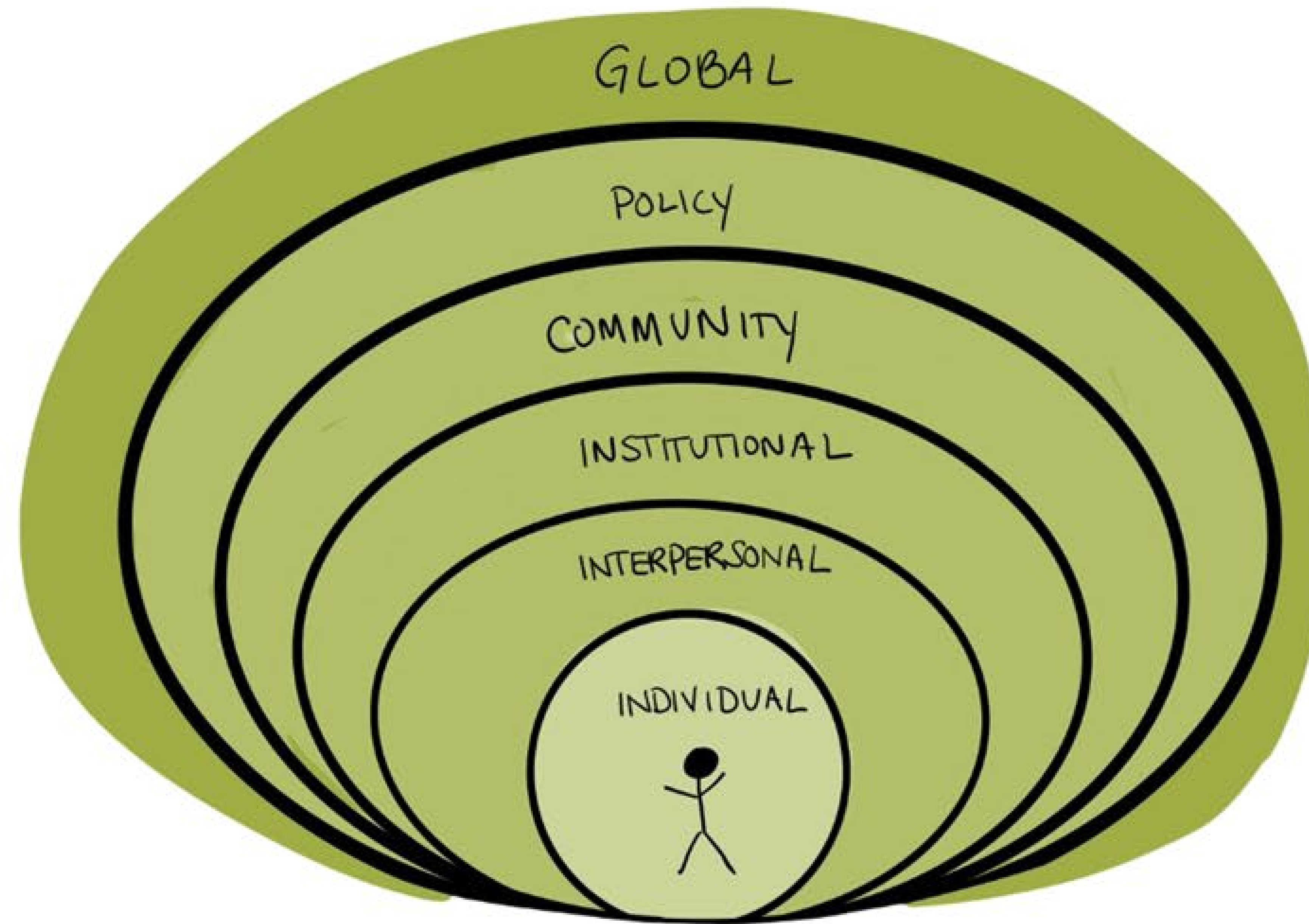


Takeaway 3:

Designing learning for action takes **intention**.

Spheres of Influence

Where can your learners act?



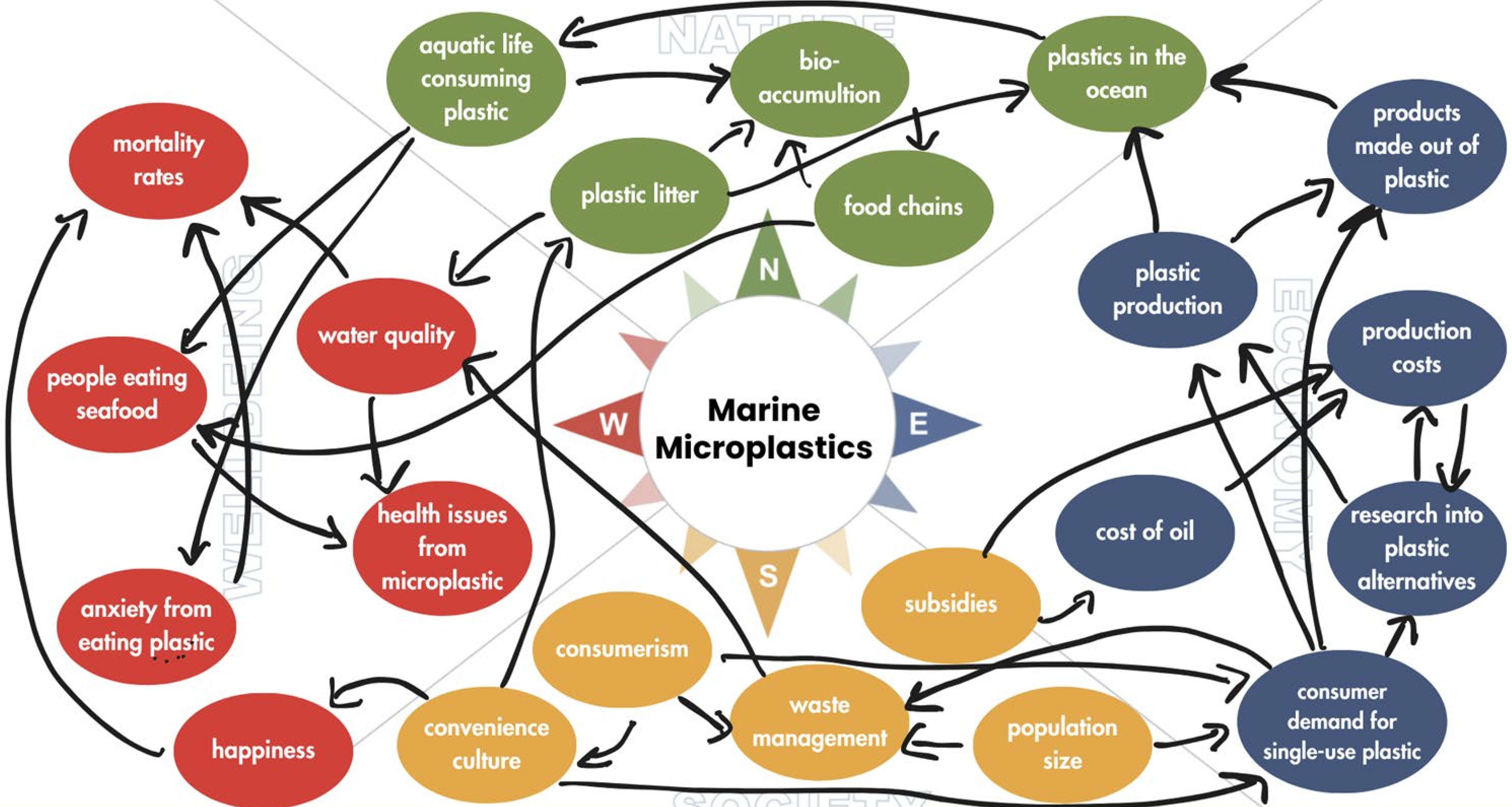
- Control



- Influence



- Concern



Listen to these students explore



What leverage point do they choose?

consumer demand for single-use plastics

Where does your learning arc end?



Issue

Action

consumer demand
for microplastics

What would you help your learners do?



Political involvement

Present on single-use plastic use at a city council meeting and lobby for fees on litter



Social Innovation

Develop an app to help people track their plastic consumption



Advocacy

Create social media story campaigns to get people to reduce plastic



Community-Engaged Research

Research local barriers to individual plastic waste reduction



Philanthropy

Fundraise for research into plastic alternatives



Volunteerism

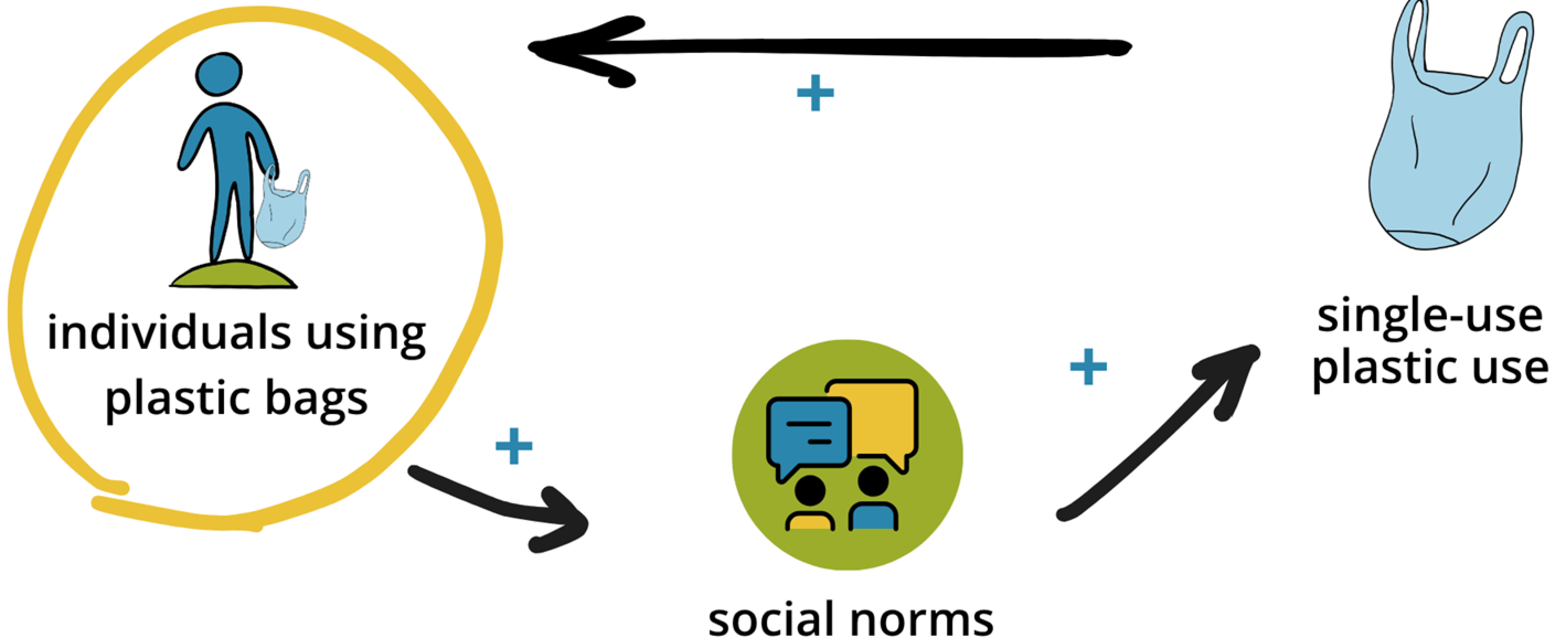
Volunteer for a beach clean-up



Service Learning

Create & distribute "low plastic living" kits

Leverage Points Support Agency



Designing learning for

Awareness

learners will know...

describes a problem

identifies underlying systems

general call to action

Designing learning for

Agency

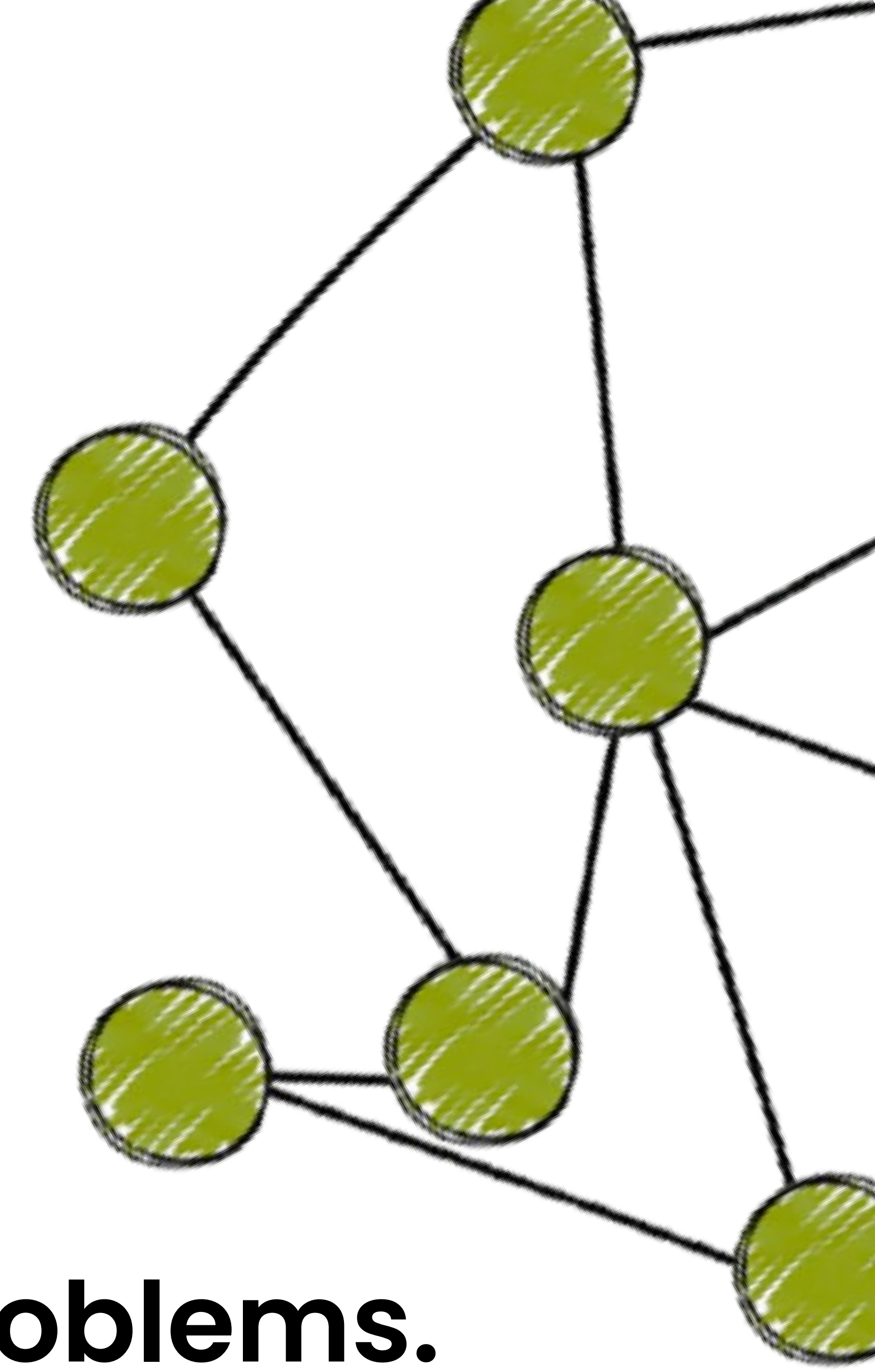
learners will be able to...

explores the causes of a
problem

identifies leverage points in the
underlying systems

specific call(s) to action focused
in learners' sphere of influence

3 Takeaways



1. Every problem lives inside a **system**.
1. **Tools** can help learners navigate complex problems.
1. Designing learning for action takes **intention**.



Which one of the **takeaways** most resonates with you today? Why?



**“When we try to pick out anything
by itself, we find it hitched to
everything else in the Universe.”**

John Muir

Questions?

Nicole Swedlow

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Gitanjali Paul

gitanjali@gitanjalilearningdesign.com



www.gitanjalilearningdesign.com



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naaee

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When Values Collide

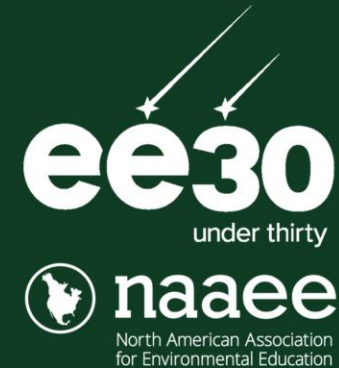
Deliberating Environmental Issues with Youth and Adults

Thursday, April 23, 3:00 –4:00 ET

 Register at bit.ly/WhenValuesCollide



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Submit by March 31 | naaee.org/ee30under30



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Let us know what topics you want to learn about in our upcoming eeWEBINARs! **NEXT?**



Thank you for joining us!

