

# Learning in a Changing Climate: an intercultural exchange between Peru and Scotland

# Welcome!



University of  
St Andrews



SAGES

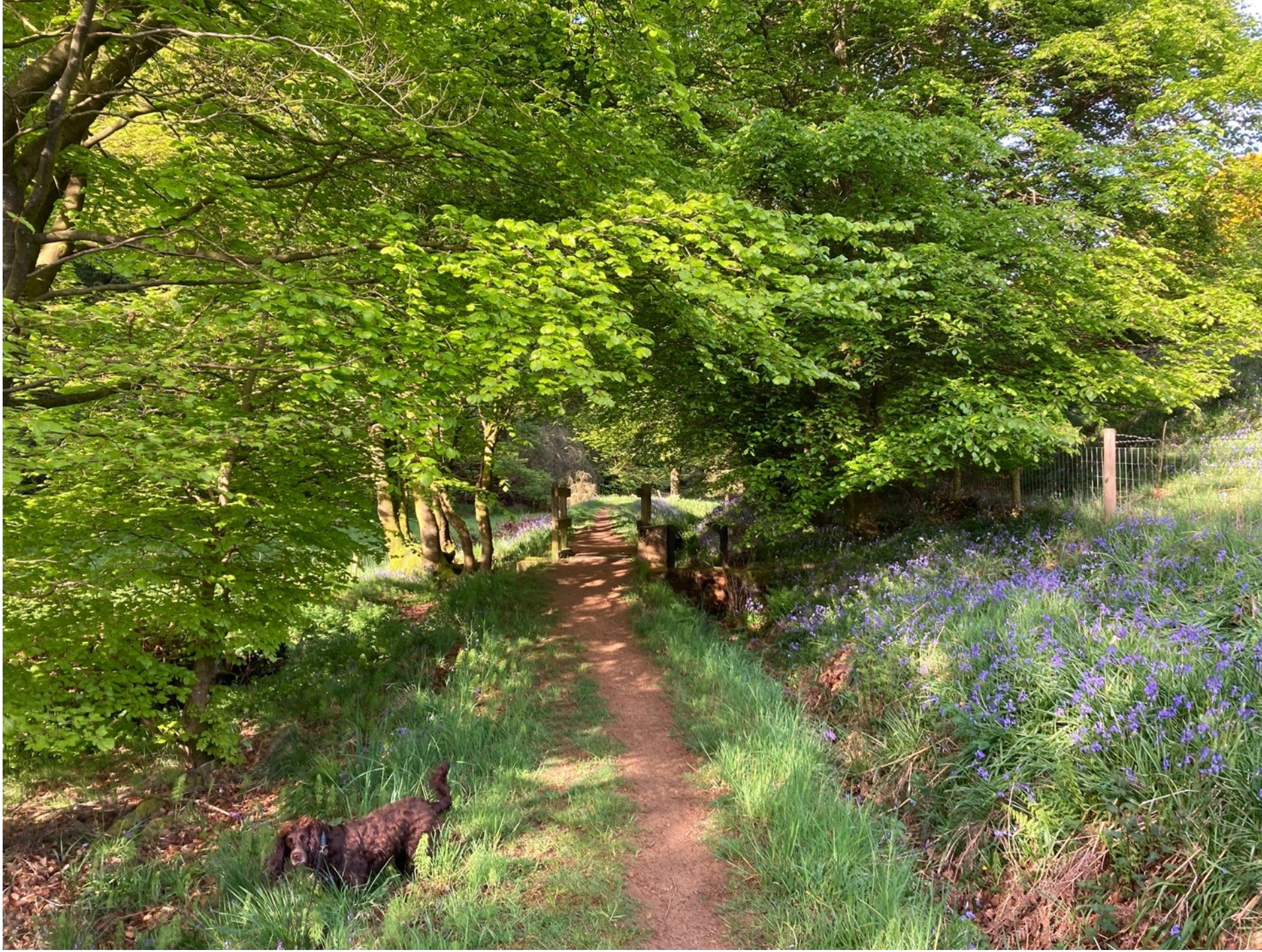
Scottish Alliance for Geoscience, Environment and Society





**Welcome!**

**Bienvenido!**





## Aims of workshop

- Hear about approaches to developing values, skills and knowledges for climate adaptation and sustainability
- Explore the curricular interventions needed to equip learners to adapt to our ever changing world
- Share perspectives on Learning for Sustainability challenges and opportunities

## Objetivos del seminario

- Conocer enfoques para desarrollar valores, capacidades y conocimientos para la adaptación al cambio climático y la sostenibilidad.
- Explorar las intervenciones curriculares necesarias para equipar a los alumnos para adaptarse a nuestro mundo en constante cambio.
- Compartir perspectivas sobre los retos y oportunidades del aprendizaje para la sostenibilidad

# Agenda

Global perspective / Perspectivo del mundo

Peru perspective

Scottish perspective

Group discussion / Discusión grupa

Plenary discussion / Discusión plenaria

Conclusions

Lunch



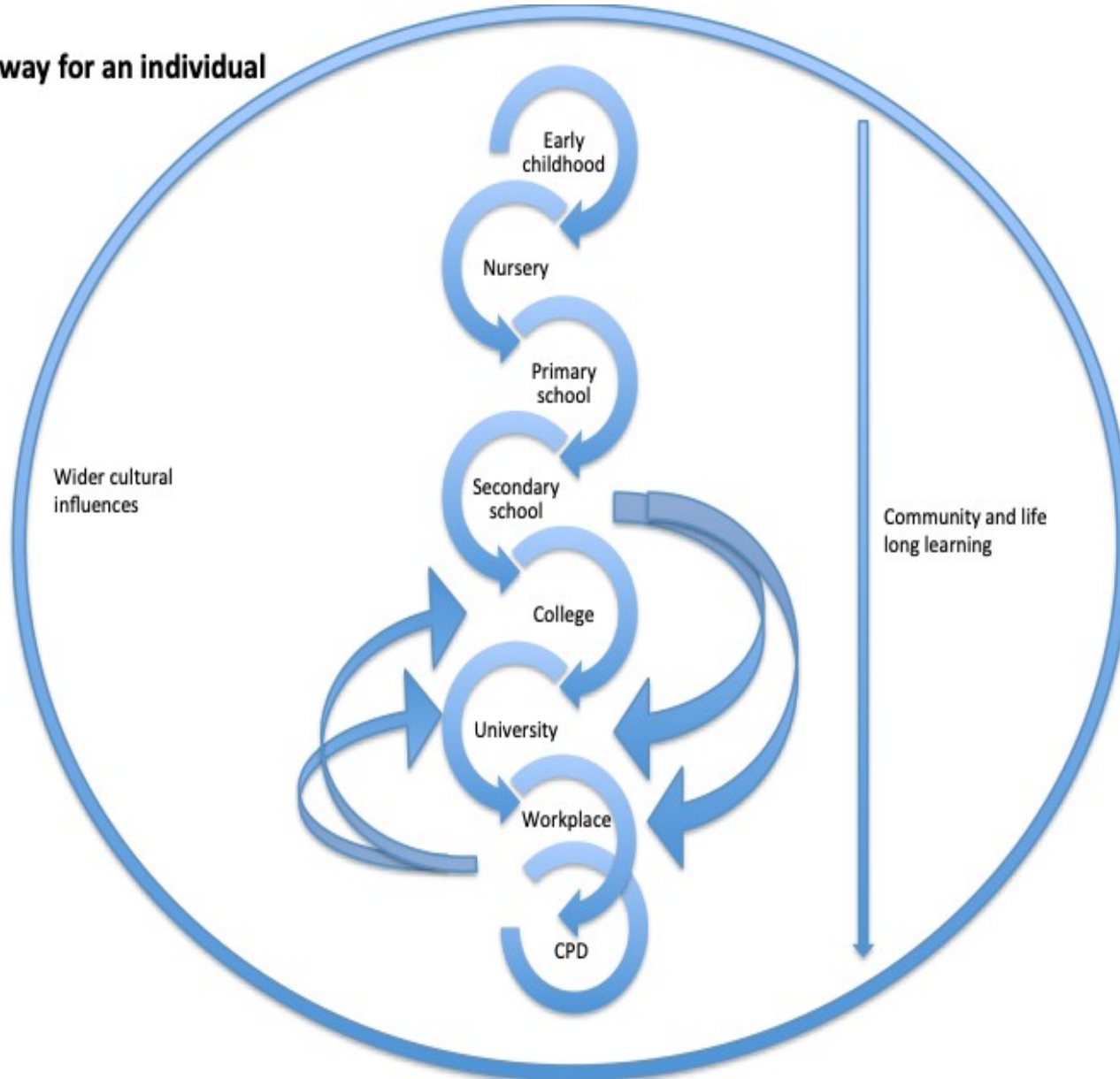
# Who are we?

**Learning for Sustainability (LfS) Scotland is a UN University-recognised Regional Centre of Expertise (RCE) in Education for Sustainable Development**

We are an open network in which members and partners come together to undertake collaborative projects, research and advocacy that advance and embed Learning for Sustainability practice and policy in Scotland.

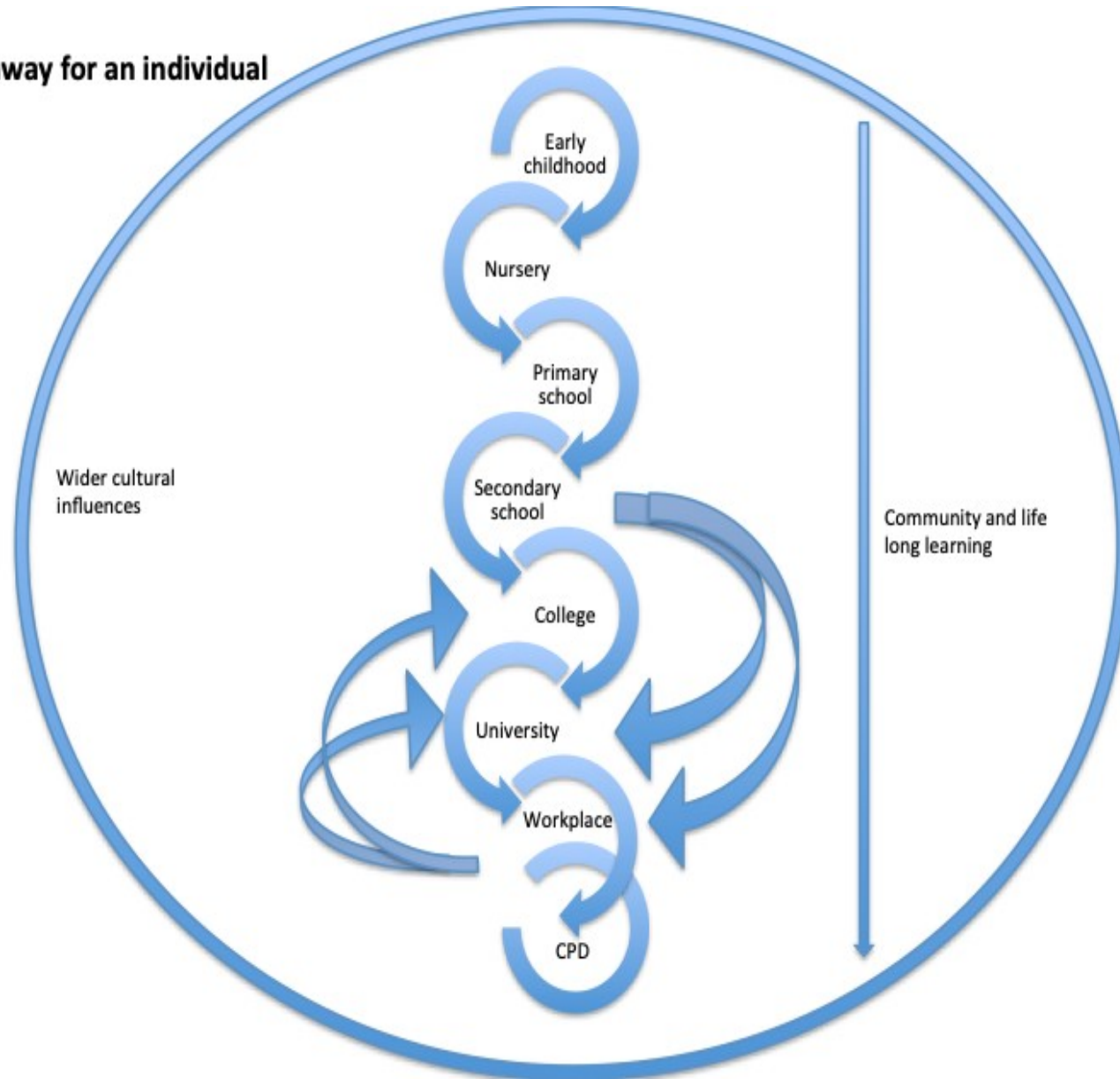
Somos una red abierta en la que los miembros y socios se reúnen para llevar a cabo proyectos de colaboración, investigación y promoción que promuevan e integren la práctica y la política del Aprendizaje para la Sostenibilidad en Escocia.

## Pathway for an individual



- Across sectors (school, community, university etc)
- Across topics (agriculture, food, biodiversity etc)
- En todos los sectores (escuela, comunidad, universidad, etc.)
- Todos los temas (agricultura, alimentación, biodiversidad, etc.)

## Pathway for an individual



## Across forms of learning

- Formal education e.g. schools, university
- Non-formal education e.g. community, Continued Professional Development
- Informal education e.g. cultural norms, media

## Distintas formas de aprendizaje

- Educación formal, p. ej., escuelas, universidad
- Educación no formal: comunidad, desarrollo profesional continuo, etc.
- Educación informal: normas culturales, medios de comunicación, etc.



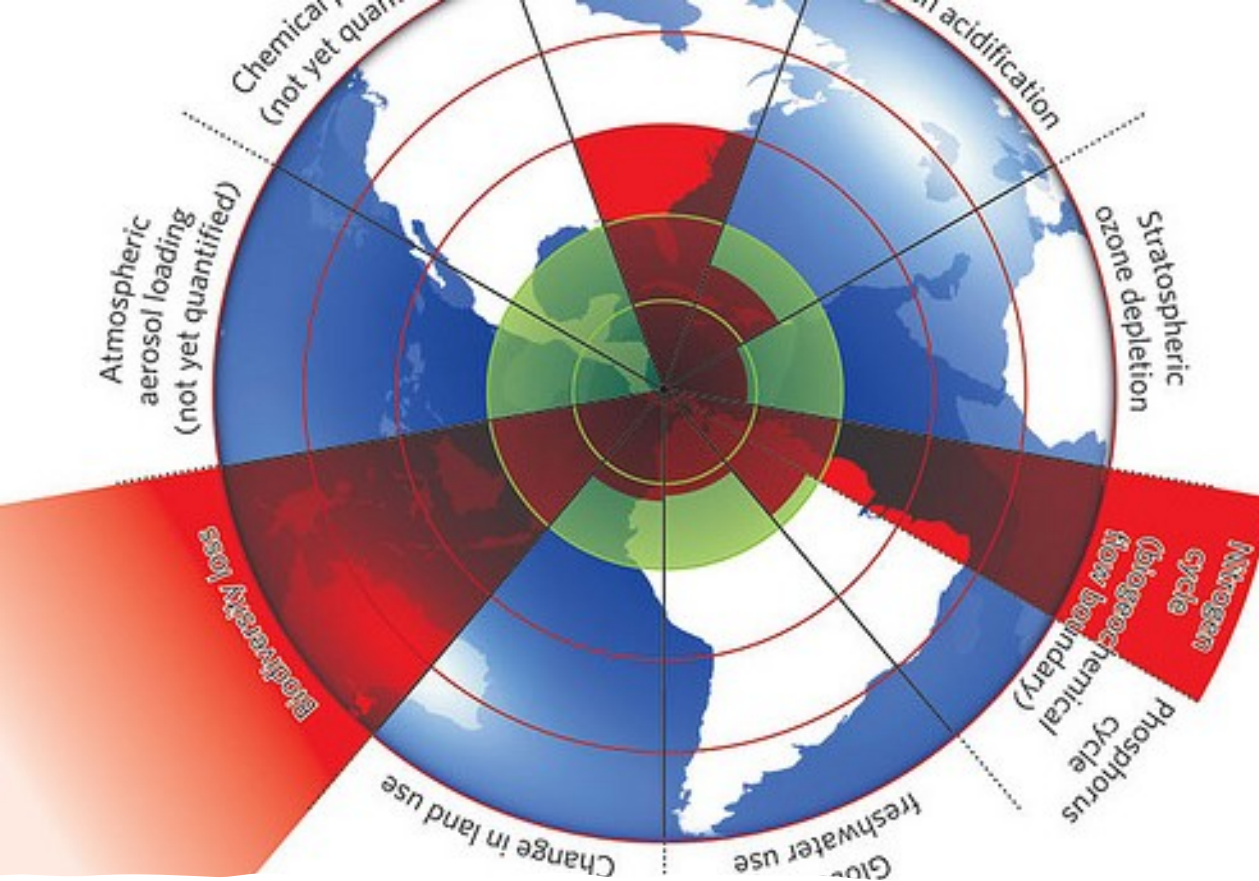


Global perspective

Perspectivo del mundo

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<https://www.theguardian.com/environment/2021/feb/04/global-heating-to-blame-for-threat-of-deadly-flood-in-peru-study-says>

## *Why is sustainability necessary? - Crisis*

*Necesitamos la sostenibilidad debido a retos como las crisis climática y de la naturaleza*



# *Why is sustainability necessary? - Opportunity*

## *Pero Tambien hay oportunidades de la sostenibilidad*





# Defining ESD

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*ESD empowers learners to take informed decisions and responsible actions for environmental integrity, economic viability and a just society, for present and future generations, while respecting cultural diversity. It is about lifelong learning, and is an integral part of quality education. ESD is holistic and transformational education which addresses learning content and outcomes, pedagogy and the learning environment. It achieves its purpose by transforming society. UNESCO, 2019*

- Not merely *about* but *for*
- Not merely environmental issues!
- ESD is an educational change agenda grounded in transformative learning and critical pedagogy
- ESD develops competencies - skills, attributes and values - for a better world
- Related to *sustainability in the curriculum, learning for sustainability, sustainability education.....*

# Definición de la educación para el desarrollo sostenible

*La EDS capacita a los educandos para tomar decisiones con conocimiento de causa y adoptar medidas responsables en pro de la integridad del medio ambiente, la viabilidad económica y una sociedad justa, para las generaciones presentes y futuras, respetando al mismo tiempo la diversidad cultural. Se trata del aprendizaje a lo largo de toda la vida y forma parte integrante de una educación de calidad. La EDS es una educación holística y transformadora que aborda el contenido y los resultados del aprendizaje, la pedagogía y el entorno de aprendizaje. Logra su propósito transformando la sociedad. UNESCO, 2019*

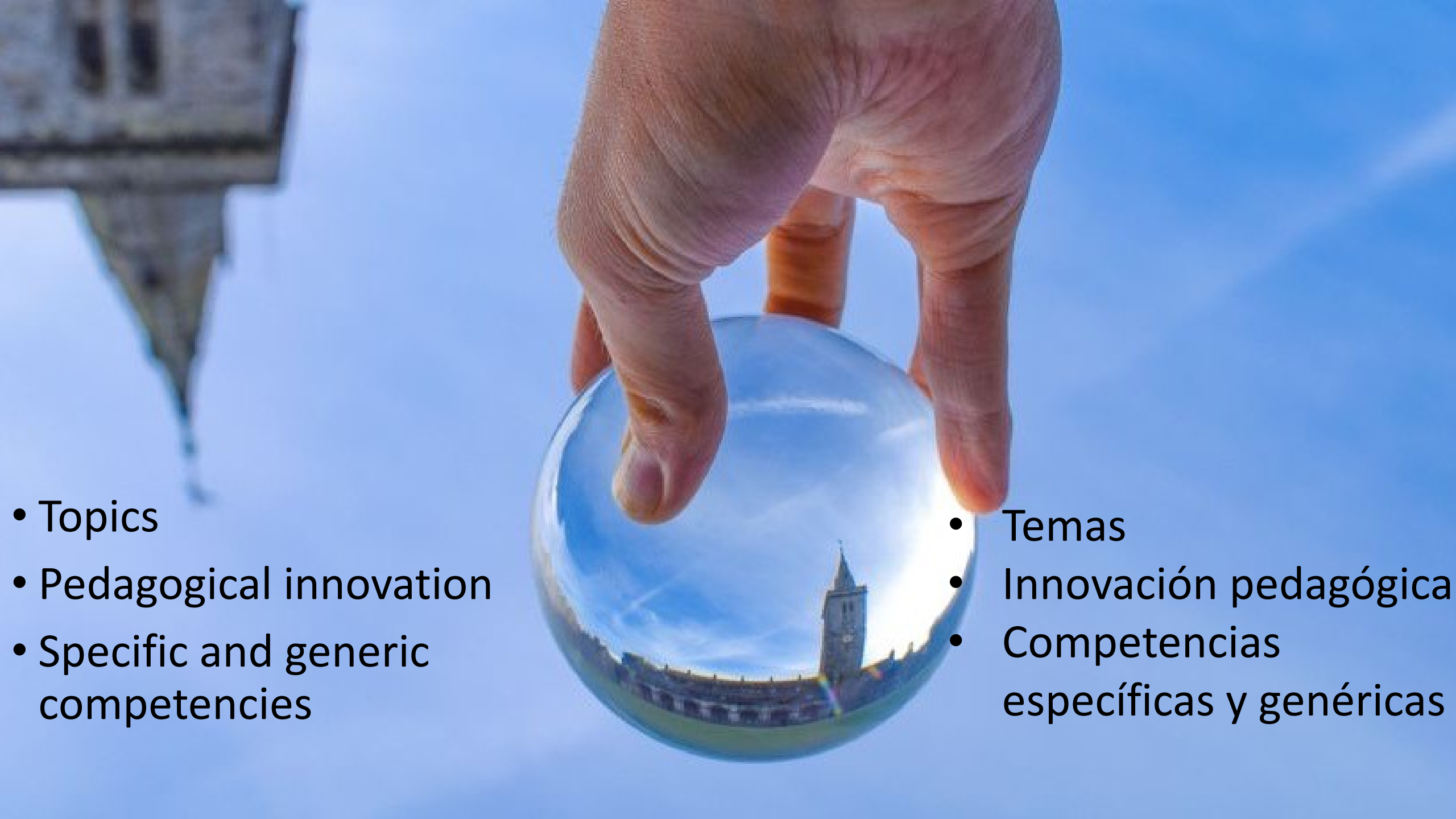
- No sólo sobre, sino para
- No se trata solo de cuestiones medioambientales.
- La EDS es un programa de cambio educativo basado en el aprendizaje transformador y la pedagogía crítica
- La EDS desarrolla competencias -habilidades, atributos y valores- para un mundo mejor





How do we do ESD?

¿Cómo hacemos la  
EDS?



- Topics
- Pedagogical innovation
- Specific and generic competencies

- Temas
- Innovación pedagógica
- Competencias específicas y genéricas





# OBJETIVOS DE DESARROLLO SOSTENIBLE

**1** FIN DE LA POBREZA

**2** HAMBRE CERO

**3** SALUD Y BIENESTAR

**4** EDUCACIÓN DE CALIDAD

**5** IGUALDAD DE GÉNERO

**6** AGUA LIMPIA Y SANEAMIENTO

**7** ENERGÍA ASEQUIBLE Y NO CONTAMINANTE

**8** TRABAJO DECENTE Y CRECIMIENTO ECONÓMICO

**9** INDUSTRIA, INNOVACIÓN E INFRAESTRUCTURA

**10** REDUCCIÓN DE LAS DESIGUALDADES

**11** CIUDADES Y COMUNIDADES SOSTENIBLES

**12** PRODUCCIÓN Y CONSUMO RESPONSABLES

**13** ACCIÓN POR EL CLIMA

**14** VIDA SUBMARINA

**15** VIDA DE ECOSISTEMAS TERRESTRES

**16** PAZ, JUSTICIA E INSTITUCIONES SÓLIDAS

**17** ALIANZAS PARA LOGRAR LOS OBJETIVOS

  
**OBJETIVOS DE DESARROLLO SOSTENIBLE**

*Not just one topic but interconnected topics*



Los temas están interconectados y tenemos que pensar de forma holística

*Not just curriculum  
but pedagogy*  
*No sólo currículo,  
sino pedagogía*

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- Collaborative learning
- Enquiry based learning
- Playful learning
- Storytelling
- Problem based learning
- Outdoor learning ....





*Not just topics and pedagogies but specific and generic sustainability competencies*

*No sólo temas y pedagogías, sino competencias específicas y genéricas de sostenibilidad*

<b>Systems thinking</b>	<b>Pensamiento sistémico</b>
<b>Future thinking</b>	<b>Pensamiento de futuro</b>
<b>Critical thinking</b>	<b>Pensamiento crítico</b>
<b>Strategic</b>	<b>Estratégico</b>
<b>Collaboration</b>	<b>Colaboración</b>
<b>Integrated problem-solving</b>	<b>Resolución integrada de problemas</b>
<b>Self awareness</b>	<b>Autoconciencia</b>
<b>Normative</b>	<b>Normativa</b>

# *Not just topics but competencies*

Specific		A student who displays this competency can	
subject knowledge and	<b>Systems thinking competency</b>	recognise and understand relationships, analyse complex systems, consider how systems are embedded within different domains and scales, deal with uncertainty	Ways of thinking
	<b>Anticipatory competency (Future thinking)</b>	understand and evaluate multiple outcomes, create their own visions for the future, apply the precautionary principle, assess the consequences of actions, deal with risks and changes	
	<b>Critical thinking competency</b>	question norms, practices and opinions, reflect on one's own values, perceptions and actions, sustainable development discourse	
knowledge of SDGs	<b>Strategic competency</b>	develop and implement innovative plans and actions that further sustainable development at the local level and further afield	Ways of practising
	<b>Collaboration competency</b>	learn from others, understand and respect the needs, perspectives and actions of others, deal with group conflicts, collaborative & participatory problem solving	
	<b>Integrated problem-solving competency</b>	apply different problem-solving frameworks to complex sustainable development problems, develop viable, inclusive and equitable solutions, utilise appropriate competencies to solve problems	
	<b>Self awareness</b>	reflect on own values and actions; monitor feelings and needs	
	<b>Normative</b>	understand and reflect on norms and values underpinning actions, appreciate other worldviews, negotiate goals and trade offs	Ways of being





# Climate adaptation / Adaptación al clima

- Requires personal resilience and collaboration; innovative critical thinking and strategy; ability to imagine future scenarios and learn from past etc
- Requiere resiliencia personal y colaboración; pensamiento crítico y estrategia innovadores; capacidad para imaginar escenarios futuros y aprender del pasado, etc.



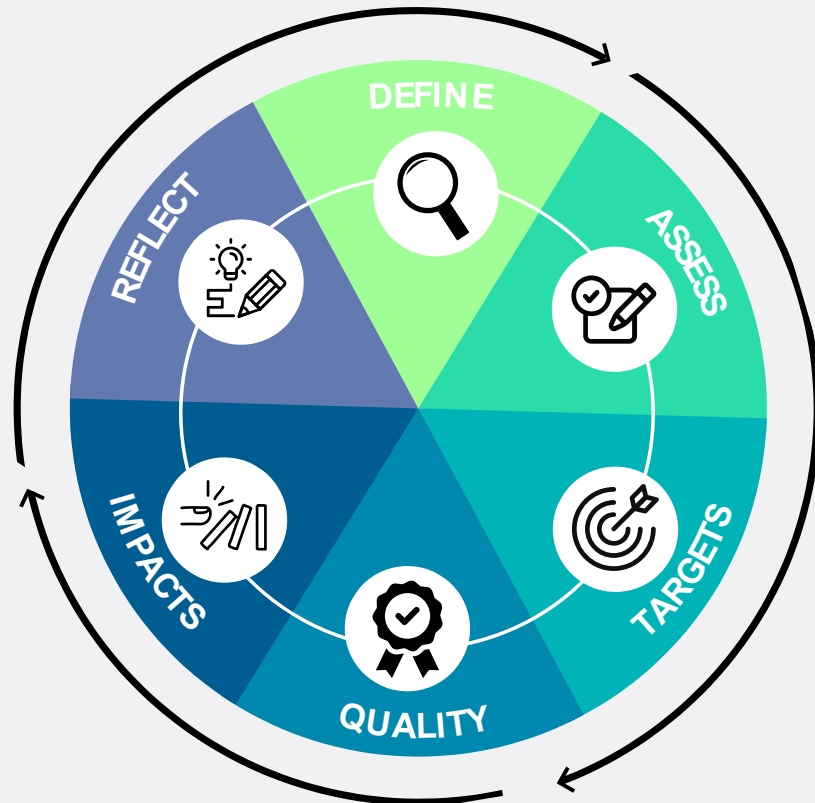


How do we monitor  
and evaluate  
competencies?

¿Cómo controlamos y  
evaluamos las  
competencias?



# A FRAMEWORK FOR MEASURING AND EVALUATING ESD



**1. Define ESD**  
What is ESD for us?  
Short explanation

**2. Assess ESD**  
How much ESD do we have?  
Short explanation

**3. Set targets**  
What is our plan for ESD?  
Short explanation

**4. Consider Quality**  
How do we assess and deepen the quality of our ESD?  
Short explanation

**5. Envision impacts**  
What are the outcomes and impacts of our ESD?  
Short explanation

**6. Reflect**  
How does our evaluation help us reflect and plan new activities?  
Short explanation



# Evaluating sustainability competencies / Evaluación de las competencias de sostenibilidad

- Short term: Reflective questioning by learners and educators?
  - Medium term: Assessing retrospective reflections?
  - Long term: Assessing impacts made by learners later in life?
- 
- A corto plazo: ¿Cuestionamiento reflexivo por parte de alumnos y educadores?
  - A medio plazo: ¿Evaluar las reflexiones retrospectivas?
  - A largo plazo: ¿Evaluar el impacto de los alumnos en el futuro?





# Conclusions

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## Conclusions

- We need to think about ESD themes, pedagogies and generic and specific competencies
- There are challenges in implementing and evaluating such learning
- The practical applications will differ across countries, contexts and curricula

- Debemos reflexionar sobre los temas, las pedagogías y las competencias genéricas y específicas de la EDS.
- La puesta en práctica y la evaluación de ese aprendizaje plantean dificultades.
- Las aplicaciones prácticas diferirán según los países, contextos y planes de estudios



# Perspectives from Peru

# Perspectives from Scotland



# Perspectives from Scotland

Kirsten Leask, Learning for Sustainability Scotland

Betsy King, Learning for Sustainability Scotland



ACKNOWLEDGED BY



UNITED NATIONS  
UNIVERSITY



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# Overview

1. Scotland's vision
2. Learning for a sustainable future
3. Building a whole-school and community approach
4. Scotland's curriculum
5. Engaging with Learning for Sustainability
- 6. What next?**



# 1. Scotland's vision

The SDGs are a core element of the Scottish Government's [National Outcomes and Performance Framework](#) (2018-23) across all policy areas.





# Taking action on the Nature and Climate Emergency



**Annual woodland creation to 18,000 hectares a year by 2024 and restore 250,000 hectares of degraded peatlands by 2030**

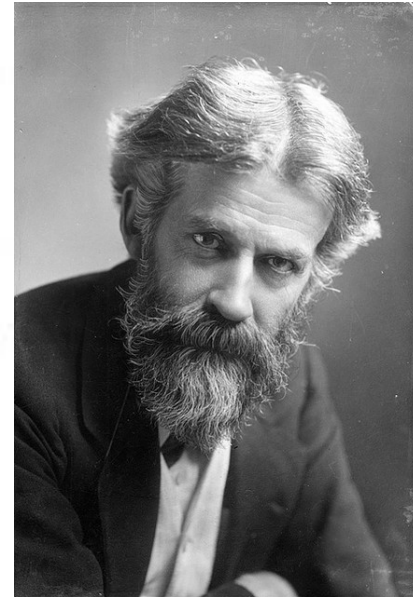
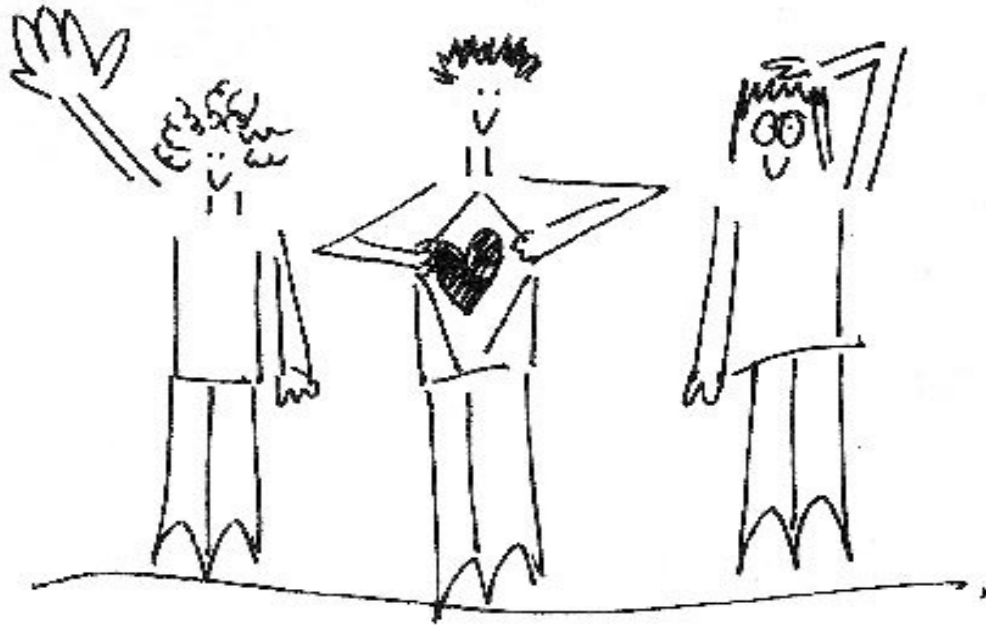


**Net Zero by 2045  
Reduce emissions by 75% by 2030**

# Learning for a sustainable future



# Education for 'heart, hand and head'



(‘for in that order they develop’ - Geddes, 1919)



# Education for ‘heart, hand and head’

‘Learning for Sustainability’ is a whole-setting commitment that helps the setting and its wider community develop **the knowledge, skills, attitudes, values and practices** needed to take decisions which are compatible with a sustainable future in a just and equitable world.



## 2. Learning for a sustainable future

In Scotland's schools Learning for Sustainability is:

1. An entitlement for all learners, and a whole-setting and community approach.
2. Woven throughout the Scottish curriculum.
3. Central to the national Professional Standards for teachers.
4. Embedded in whole-school self-evaluation.



### 3. Building a whole-setting and community approach

Curriculum - Learning, teaching, assessment, pedagogy

Culture - Learner voice, UNCRC, ethos, relationships

Community - Place, partnerships, families, local action

Campus - Buildings, grounds, transport, energy & water use

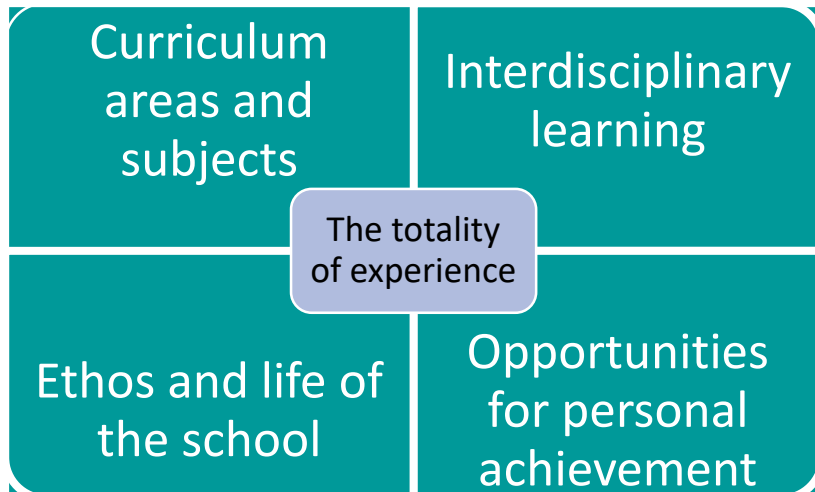


# 4. Scotland's curriculum

curriculum for excellence



- Coherent learning from 3-18 years
- Delivered through Four Contexts



# Curriculum for Excellence: Four Capacities

successful learners	confident individuals	responsible citizens	effective contributors
<b>attributes</b> <ul style="list-style-type: none"><li>• enthusiasm and motivation for learning</li><li>• determination to reach high standards of achievement</li><li>• openness to new thinking and ideas</li></ul>	<b>attributes</b> <ul style="list-style-type: none"><li>• self-respect</li><li>• a sense of physical, mental and emotional well-being</li><li>• secure values and beliefs</li><li>• ambition</li></ul>	<b>attributes</b> <ul style="list-style-type: none"><li>• respect for others</li><li>• commitment to participate responsibly in political, economic, social and cultural life</li></ul>	<b>attributes</b> <ul style="list-style-type: none"><li>• an enterprising attitude</li><li>• resilience</li><li>• self-reliance</li></ul>
<b>capabilities</b> <ul style="list-style-type: none"><li>• use literacy, communication and numeracy skills</li><li>• use technology for learning</li><li>• think creatively and independently</li><li>• learn independently and as part of a group</li><li>• make reasoned evaluations</li><li>• link and apply different kinds of learning in new situations.</li></ul>	<b>capabilities</b> <ul style="list-style-type: none"><li>• relate to others and manage themselves</li><li>• pursue a healthy and active lifestyle</li><li>• be self-aware</li><li>• develop and communicate their own beliefs and view of the world</li><li>• live as independently as they can</li><li>• assess risk and make informed decisions</li><li>• achieve success in different areas of activity.</li></ul>	<b>capabilities</b> <ul style="list-style-type: none"><li>• develop knowledge and understanding of the world and Scotland's place in it</li><li>• understand different beliefs and cultures</li><li>• make informed choices and decisions</li><li>• evaluate environmental, scientific and technological issues</li><li>• develop informed, ethical views of complex issues.</li></ul>	<b>capabilities</b> <ul style="list-style-type: none"><li>• communicate in different ways and in different settings</li><li>• work in partnership and in teams</li><li>• take the initiative and lead</li><li>• apply critical thinking in new contexts</li><li>• create and develop</li><li>• solve problems</li></ul>

# Curriculum entitlements

Children and young people's rights and entitlements are central to Scotland's curriculum and every child and young person is entitled to experience:

- a curriculum which is coherent from 3 to 18
- a broad general education, including well planned experiences and outcomes across all the curriculum areas from early years through to S3. **This includes understanding the world, Scotland's place in it and the environment, referred to as Learning for Sustainability**
- a senior phase after S3, which provides opportunities to attain and achieve, including to study for qualifications, awards and other planned activities to develop the four capacities

<https://scotlandscurriculum.scot/>

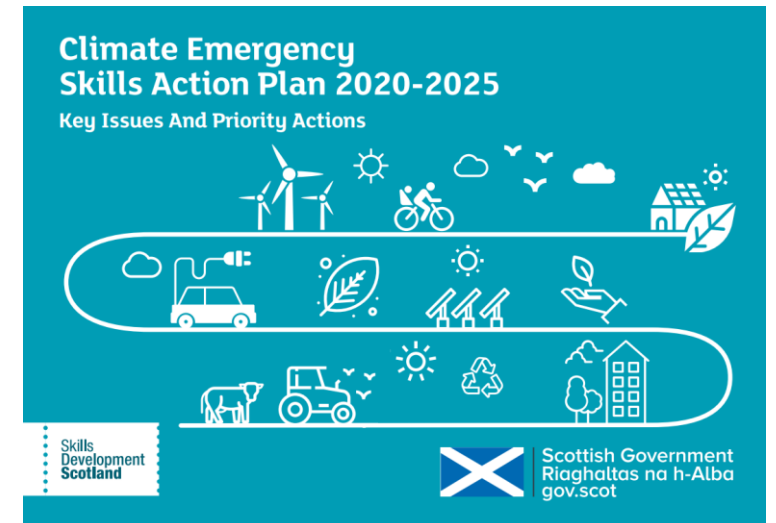


# Skills Development Scotland Metaskills 2021

Skills 4.0 A skills Model to Drive Scotland Forward.



- Self-Management: Manage the now
- .
- Social Intelligence: Connect with the world
- Innovation: Create our own change



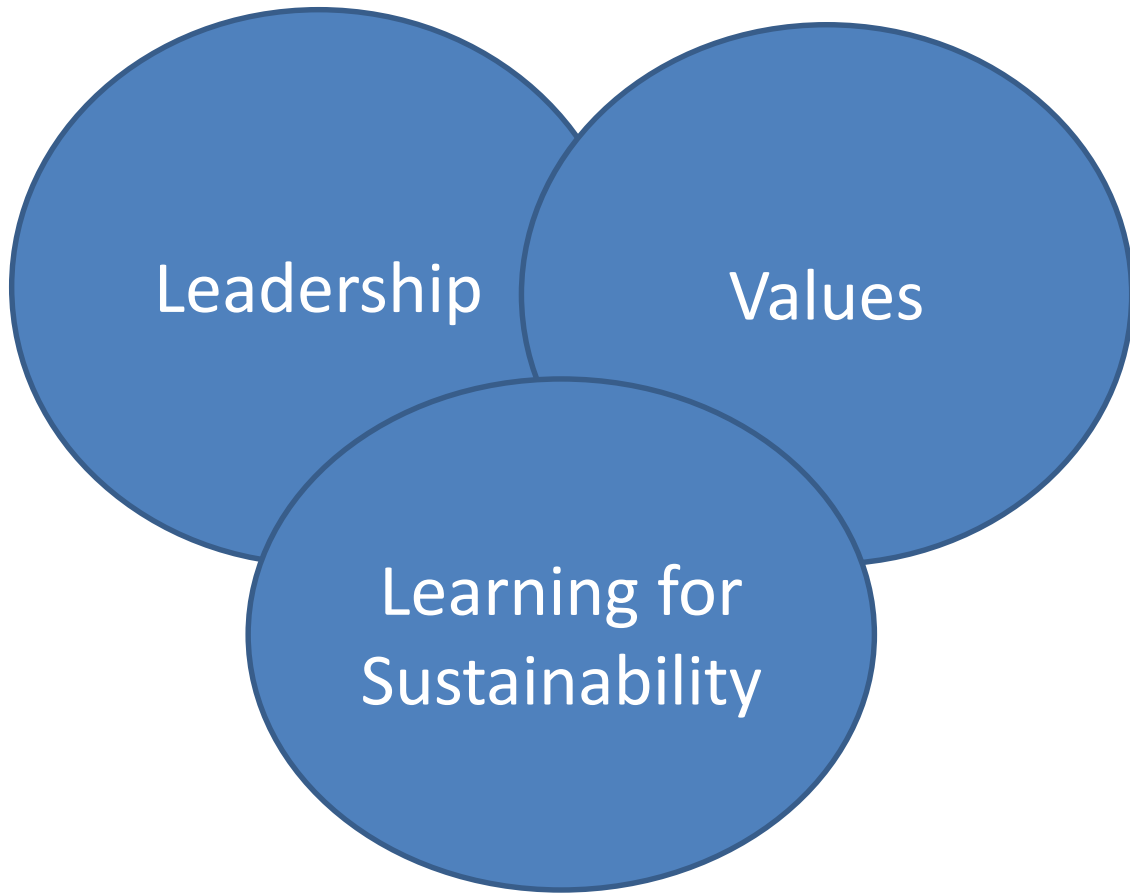
# Education for Sustainable Development SuperVision 4.0

Competences for sustainable development	
Dimensions	Key abilities
<b>Cognitive</b>	Critical thinking; Systems thinking; Creative thinking
<b>Social and emotional (personal)</b>	Communication; Collaboration; Solidarity
	Reflexivity; Value-orientation; Responsibility
<b>Behavioural</b>	Futures thinking; Innovative decision; Transformative action

**Structure of Observed Learning Outcomes (SOLO) Taxonomy** used to describe progressive levels of student achievements.



## 5. Engaging with Learning for Sustainability: central to the national professional Standards for teachers



*‘Making a professional commitment to learning and learners that is compatible with the aspiration of achieving a sustainable and equitable world embodies what it is to be a teacher in Scotland’.*

The [General Teaching Council for Scotland](#) 2021

‘Becoming- Being- Growing’ as a teacher



# Teachers as enquiring professionals



Children's voice led to questions and enquiry about Spring, pollen, bees

Led to videos, reading, discussion, visit of a local beekeeper and his hive.

Led to understanding of the diminishing bee population - took action to address this by creating a bee garden

## BEES Early Years



'children have deeper knowledge and understanding of helping to sustain bees.' Parents influenced to buy plants to attract bees.'

committed to helping colleagues in developing skills to explore sustainability through child led inquiry

'the child led interest and inquiry made it successful'

'enabled me to develop my skills in consultative planning with children'

Questioning what learners need to come to school? Researching cost and impact.

'Think, feel, do' discussion to find ways to make school fairer for all

Creative ideas eg non-themed discos, uniform swap shop, school time for homework that needs IT, longer time to pay for school trips

## CHILD POVERTY

Primary

'the children were very keen to problem-solve ways to poverty-proof the school day'.  
'They could see the direct impact of their actions on a fairer system for all'



'There have been considerable changes in our school community and we all need to respond'

'I am committed to engaging learners in real world issues'



Discussion and questioning learners' values, what fairness means

Investigated consumer, business, raw materials and workforce perspectives on phone production

Led to alternative design suggestions based on the learners' values and knowledge

SMART PHONE PRODUCTION  
– VALUES AND ETHICS  
Secondary Art and Design

'Self directed research was a powerful way to create positivity'

'It introduced a level of mindfulness not usually explored in the Department'



'I have approached the Science Dept. with the idea of teaching across subject areas'

'I can raise awareness in a holistic and seamless way rather than as an add on'

## 6. What's next?

### Opportunities

- Children and young people are asking for action
- Time of change in Scottish education
- Building a movement for change
- LfS as a 'golden thread' across Scotland's policies
- ...

### Challenges

- LfS as an integrated holistic concept in secondary schools
- Examining and assessing learner 'Capacities'
- ...





[www.learningforsustainabilityscotland.org](http://www.learningforsustainabilityscotland.org)

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# Community dialogue

# Plenary

# Conclusions and next steps





# Lunch and networking

