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Communicating climate change

Across the curriculum

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Session outline

Time	Section
10 minutes	Introductions
5 minutes	Cambridge approach to climate change education
20 minutes	Multidisciplinary approach – Part 1
20 minutes	Multidisciplinary approach – Part 2
10 minutes	Interdisciplinary approaches
5 minutes	Final questions and comments

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The Cambridge approach to climate change education

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Climate change education

….helps learners understand and address the impacts of the climate crisis, empowering them with the knowledge, skills, values and attitudes needed to act as agents of change*

https://www.unesco.org/en/climate-change/education

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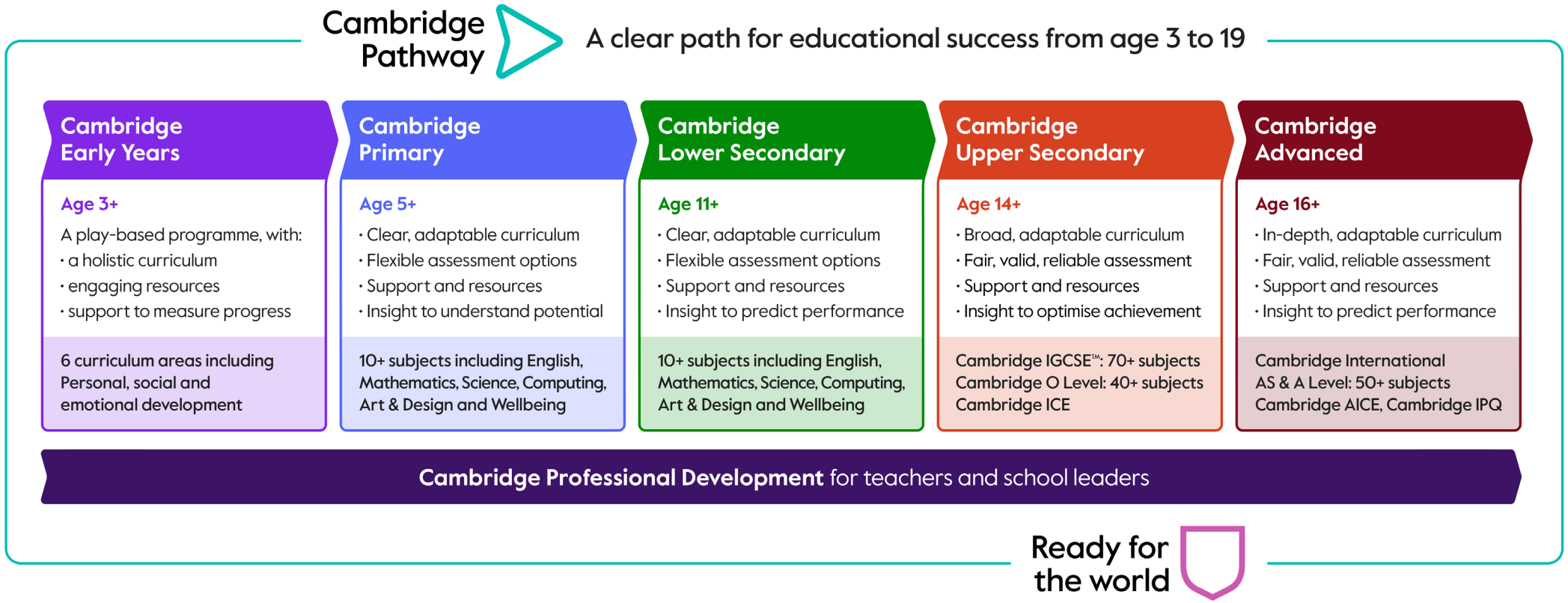
Cambridge Pathway



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Climate change education in the Cambridge Pathway

Helping learners understand and address the impacts of the climate crisis, empowering them with…

Knowledge and skills

Climate Science
- Environmental Management
- Geography
- Sciences

In particular contexts
- Business Studies
- Commerce
- Economics
- Fashion & Textiles
- Marine Science
- Country Studies (e.g. Bangladesh & Pakistan)

+

Values and attitudes

- Cambridge Learner Attributes
- Biblical Studies
- Islamic Studies
- Religious Studies
- Cambridge Global Perspectives

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To act as agents of change

Skilled to engage
- Communication Skills
- Critical Thinking Skills
- Mathematical & Data Skills
- Design Skills
- Digital Skills

Experience of collaborative change
- Cambridge Global Perspectives
- Science Competition

Empathetic and resilient
- Wellbeing
- Cambridge Learner Attributes

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Multidisciplinary approach

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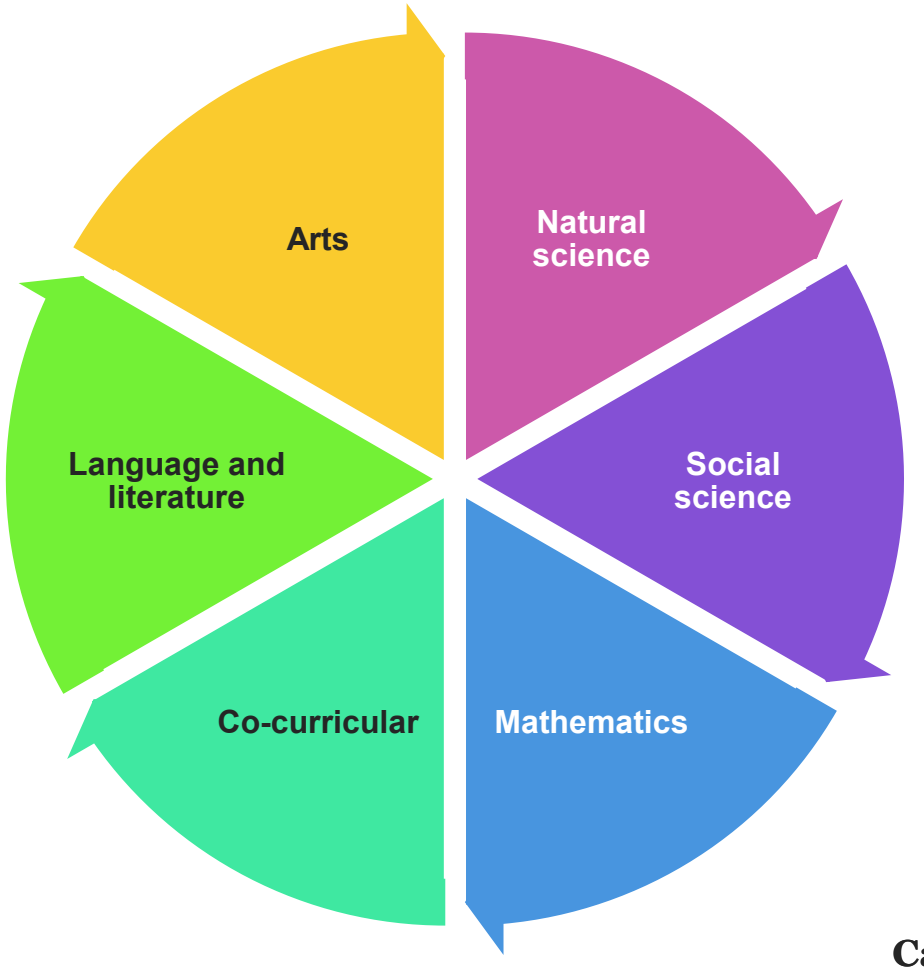
The climate curriculum wheel



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Part 1

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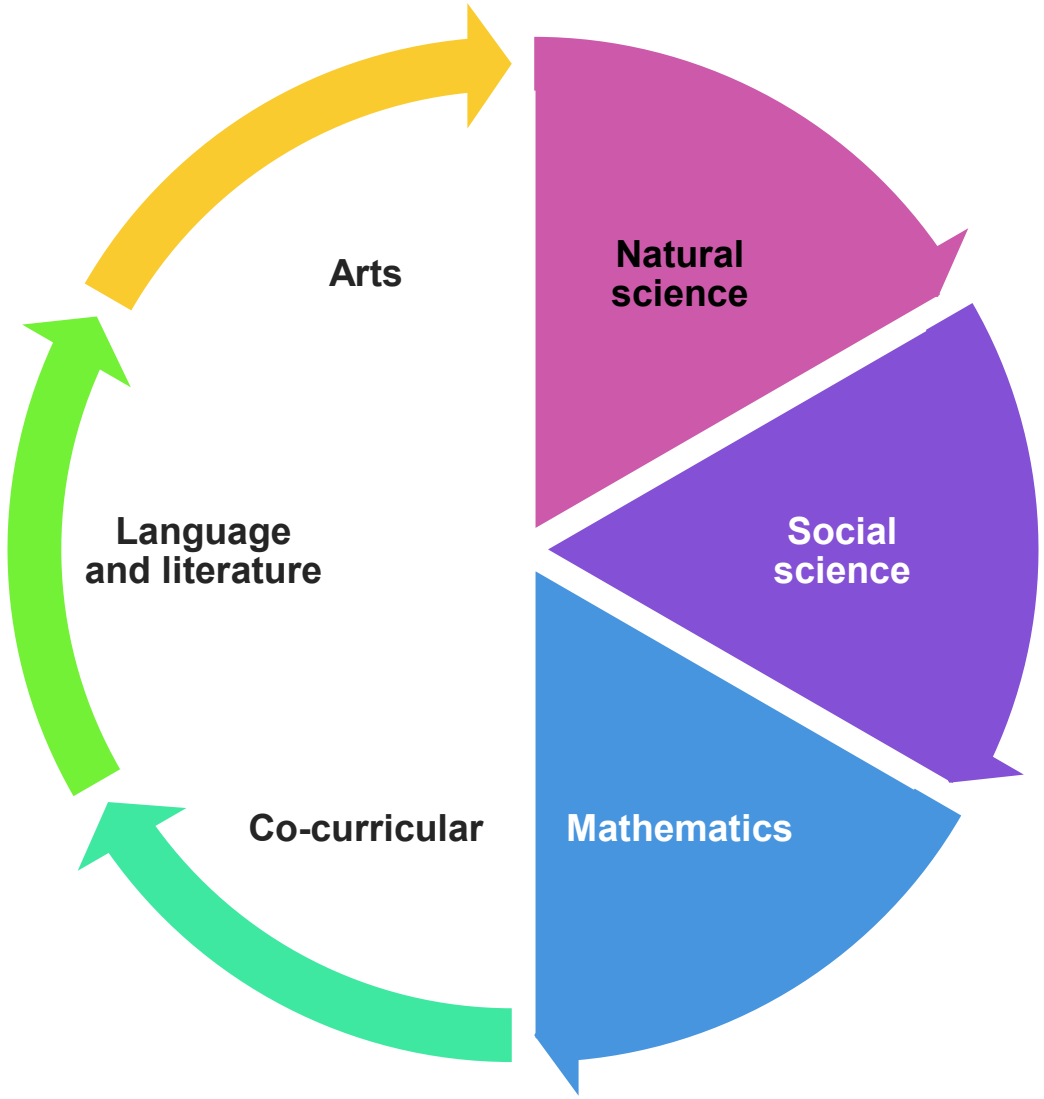
Arts
Natural science
Language and literature
Social science
Co-curricular
Mathematics

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Time Capsule Found on a Dead Planet

by Margaret Atwood - I'm With the Bears (2009, Verso Books)

- Read the short story
- Record your thoughts to the following questions:
  - What role do money and wealth play in this piece?
  - What impact do money and wealth have on our environment and on society?

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The impact of fast fashion on climate and the environment

~ 25% of global chemical output originates from the textile industry

~ 300,000 tonnes of clothing end up in landfill annually; ~ 80% is incinerated releasing methane, a greenhouse gas that is 28 times more powerful than CO_2

The fashion industry produces 20% of global wastewater. It is expected that will increase by 50% by 2030

10% of global CO_2 emissions are caused by the textile industry

~ 80 billion pieces of clothing sold annually, 400% increase in 20 years

20-35% of all primary source microplastics in the marine environment are from synthetic clothing

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Climate change education in our classrooms

Design and Technology

- Research alternative ways of creating textiles.
  - Companies that are turning food waste into textiles.
  - Investigate what design features can help to make clothing last longer.
  - Create a new product using recycled clothing.

Maths and Economics

- Look at the labels on your clothes. Present data to show which countries they were made in, what types of materials they were composed of and what percentages.

- Analyse data that shows the impact on the environment and the economics of emissions abatement e.g. fashion-on-climate-full-report.pdf (mckinsey.com)

Climate change education in our classrooms

History

- Explore the historical significance of the industrial revolution. What is the significance of industrialisation on our climate and environment?
- Research the history of cotton. What role did it play in European colonialism and the enslavement of African people, and the creation of industrial cities and a working class in the UK.

Computer Technology

- Design social media assets such as an animation or an infographic to share facts about some of the impacts of fast fashion.
- Design and plan a clothing app. Explore the growing world of digital fashion, where people can ‘wear’ digital clothing through augmented reality or digitally altered photos.

Climate change education in our classrooms

Science

- Research the chemicals used or produced in clothing manufacturing. What impact do they have on our health, environment and climate?
- Research the impact of greenhouse gasses on climate.

Chemicals in our Clothing

Impact categories:	Chemicals:	Flame Retardants	PFAS	Lead	Chromium	Phthalates	Chlorine Bleach	Azo dyes	VOCs
	Probable Carcinogens	✓	✓✓	✓	✓	✓	✓✓	✓	✓
	Skin irritants	✓	✓	✓	✓	✓	✓✓	✓	✓
	Hormone Disruptors	✓	✓	✓	✓	✓	✓	✓	✓
	Environmental degradation (Water pollution)	✓✓	✓✓	✓	✓	✓✓	✓	✓	✓

✓ Short-term or acute exposure can lead to health impacts

✓ Prolonged or extensive exposure can lead to health impacts

All information obtained from F

https://www.earthday.org/toxic-textiles-the-chemicals-in-our-clothing/

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Part 2

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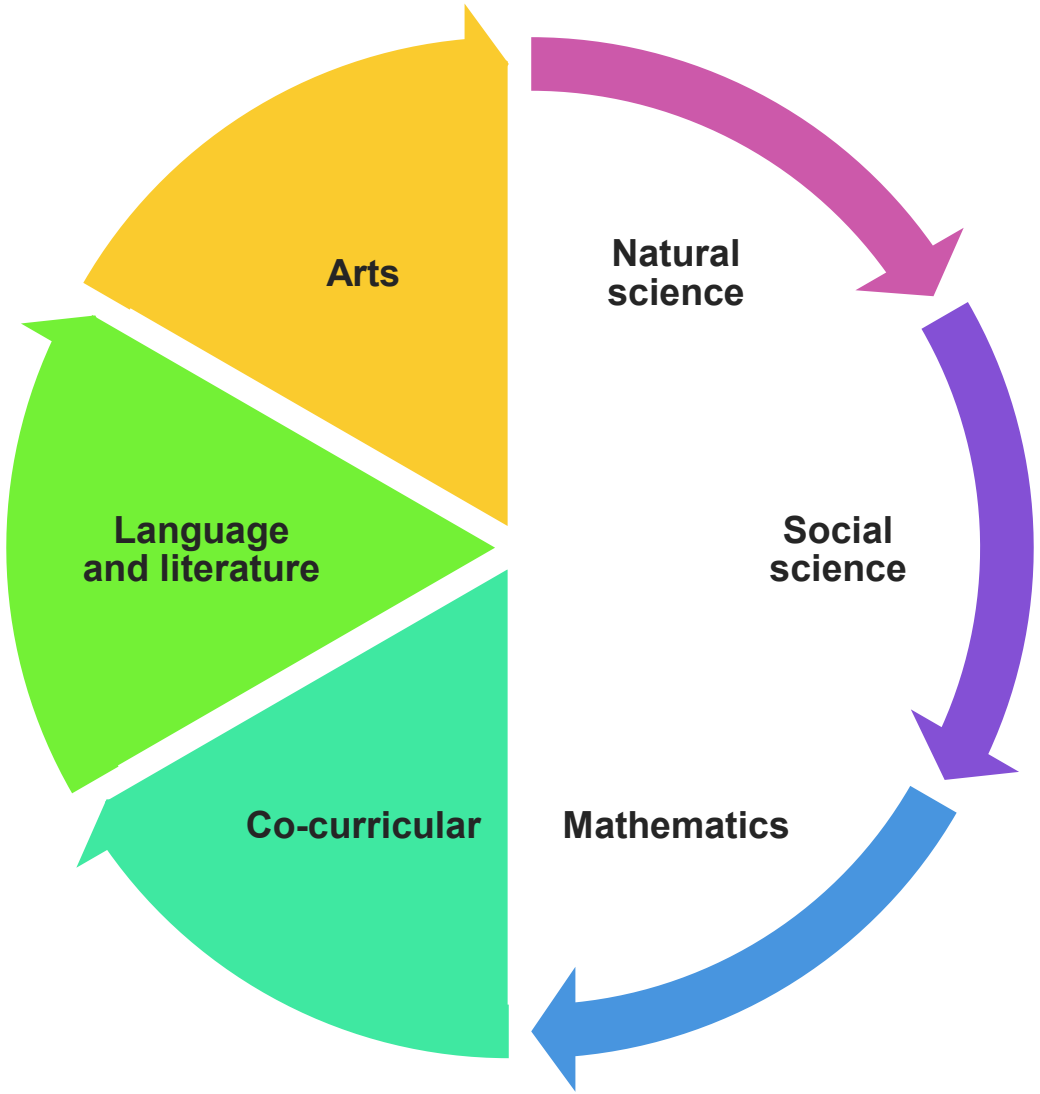
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When I heard the learn’d astronomer

When I heard the learn’d astronomer,

When the proofs, the figures, were ranged in columns before me,

When I was shown the charts and diagrams, to add, divide, and measure them,

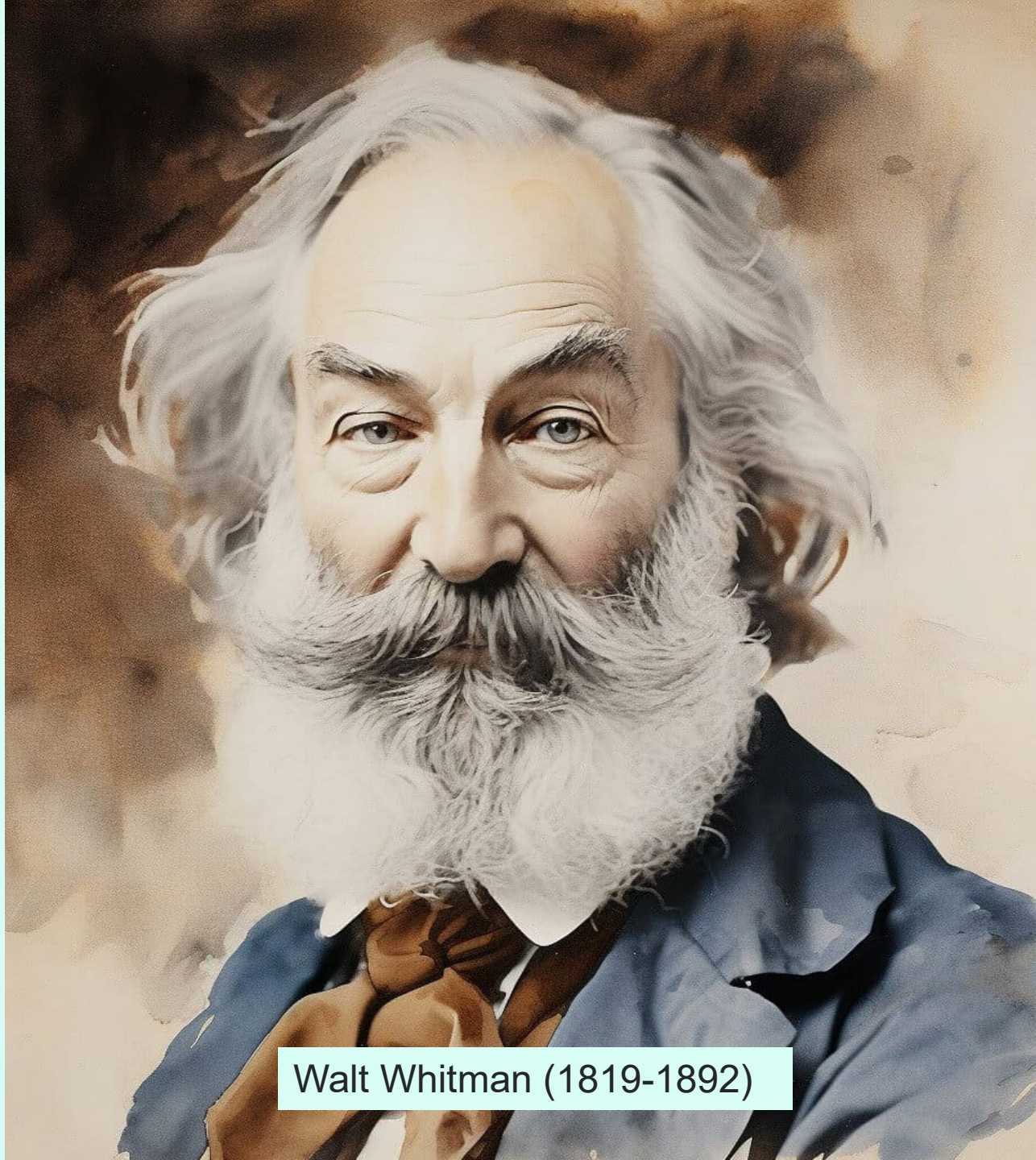
When I sitting heard the astronomer where he lectured with much applause in the lecture-room,

How soon unaccountable I became tired and sick,

Till rising and gliding out I wander’d off by myself,

In the mystical moist night-air, and from time to time,

Look’d up in perfect silence at the stars.



Walt Whitman (1819-1892)

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Night music

I saw sounds at night
altering the shapes of trees

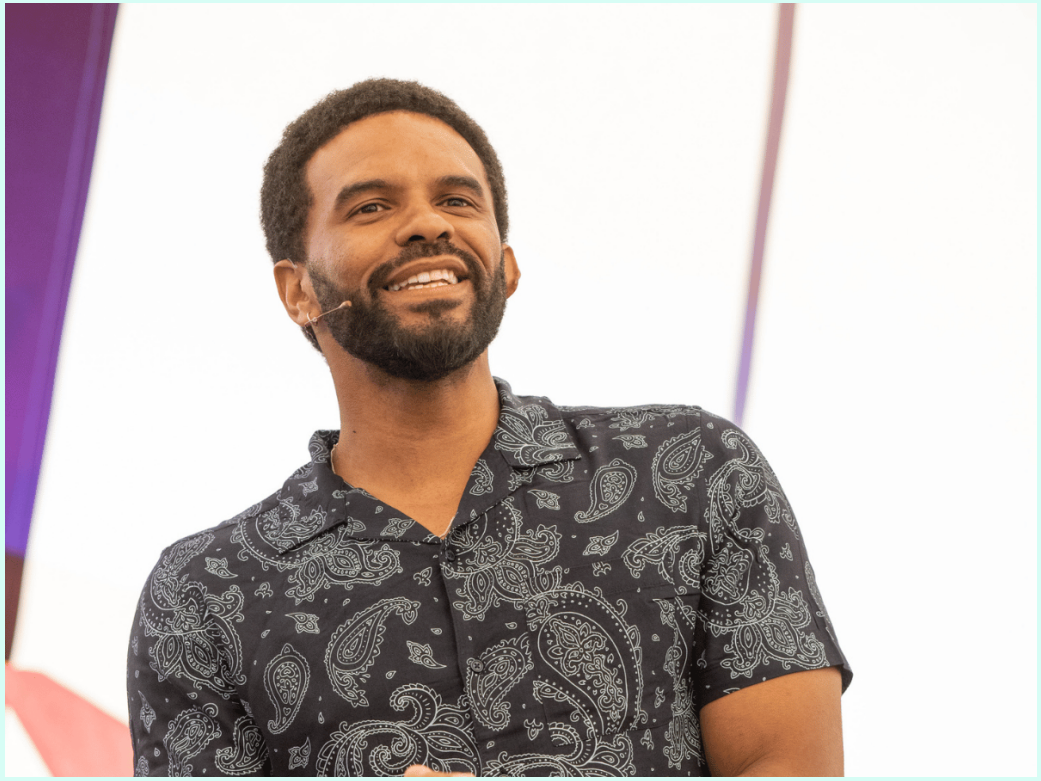
tickling shadows
dancing on an owl's tongue,

I saw sounds skipping
from door to door,

rattling the letterbox,
slipping into dreams,

I saw a gentle drumbeat
chase a prancing fox,

amongst a tiny applause
of closing flowers.



Alex Wharton

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Nature in urban spaces – activities

1. Read ‘Night music’ by Alex Wharton
2. Think of an animal or bird you see often (not a pet)
3. Describe in as much detail as possible what this living thing does
   - What colour is it?
   - What does it eat?
   - How does it move?
   - When do you see it?
   - Where do you see it?
4. Invent a scene using a sense other than ‘seeing’
5. Create a piece of writing (poem, song or other), focusing on images and the reader’s or listener’s journey through the story you are telling

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I saw a peacock

I saw a peacock, with a fiery tail,
I saw a blazing comet, drop down hail,
I saw a cloud, with ivy circled round,
I saw a sturdy oak, creep on the ground,
I saw a spider, swallow up a whale,
I saw a raging sea, brim full of ale,
I saw a Venetian glass, sixteen foot deep,
I saw a well, full of mens' tears that weep,
I saw their eyes, all in a flame of fire,
I saw a house, as big as the moon and higher,
I saw the sun, even in the midst of night,
I saw the man, that saw this wondrous sight.

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Constrained writing

- **Lipogram** – ban one letter of the alphabet
- **Random glossary** – find a list of words about climate change and count the number of words, then use only the words corresponding to 10 numbers you select
- **Snowball** – in order, choose words of one, two, three letters, etc. or use the Fibonacci sequence (0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89,144)
- **Pilish** – use words with lengths corresponding to Pi (3.14159265359)
- **Erasure** – find a long text on the topic and erase all words except a few

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Examples of Pilish and Erasure

You, I, plea,
O Earth –
Challenge us.
Listen, focus:
The world remembers!

(Pi = 3.14159265359)

We believe that education is key to tackling the climate crisis. Together with Cambridge schools, we can empower young people with the skills and knowledge to take action on climate change, helping them be ready for the world.

We believe that amplifying student voices and developing their critical, creative and communication skills is key to finding solutions to the climate crisis. We want to inspire and empower learners to solve problems by considering the challenge from different perspectives – global and local.

By embedding climate change into the curriculum, we can help every Cambridge school deliver climate change education that shapes knowledge, understanding and skills, and gives learners the confidence to thrive and make a positive impact in our changing world.

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Examples of Pilish and Erasure (or Highlight)

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“Dear Mum” by Woodzy

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Creative brainstorm

- What activities have you used or seen others use that you consider effective?
  - Why were they effective?
  - How would you adapt them?

- Discuss in groups
- Prepare to share

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Cambridge Schools Conference, July 2024

Effective communication: from competence to confidence

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Organising debates

- See Debate Mate, English Speaking Union (ESU) and Model United Nations (MUN) for ideas on how to get started
- Encourage learners to assume personas so they can understand others' perspectives
- Invite external speakers – e.g. from NGOs, charities, community organisations, scientific institutions or agriculture

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Unicef – “Kids speak out”

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Slogans for debate

MAKE EARTH COOL AGAIN!

THE CLIMATE IS CHANGING: WHY AREN'T WE?

YOU'LL DIE OF OLD AGE. WE'LL DIE OF CLIMATE CHANGE!

YOU CAN'T DRINK OIL. WE CAN'T BREATHE MONEY!

THE WRONG AMAZON IS BURNING!

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Learner wellbeing

NEWS FEATURE | 10 April 2024

The rise of eco-anxiety: scientists wake up to the mental-health toll of climate change

Researchers want to unpick how climate change affects mental health around the world – from lives that are disrupted by catastrophic weather to people who are anxious about the future.

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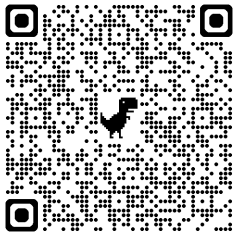
What is eco-anxiety?

In recent years, more and more people – including kids – have experienced eco-anxiety. Described as extreme and persistent worry about current and future harm to the environment due to climate change, this condition can cause not only emotional distress, but also panic attacks, lack of focus, and feelings of hopelessness.

In many ways, mild eco-anxiety can seem a *normal* way to feel about the current situation, and these fears often stem from a deep love and care for the natural world. But **a survey of child psychologists** suggested that more than half were seeing children and young people who expressed distress, fear and worry about the state of the environment. So, it's important to recognise these worries and help kids manage their feelings safely.

National Geographic Kids



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What can you do to ease eco-anxiety?

- Give them perspective
- Let them take action
- Keep them informed

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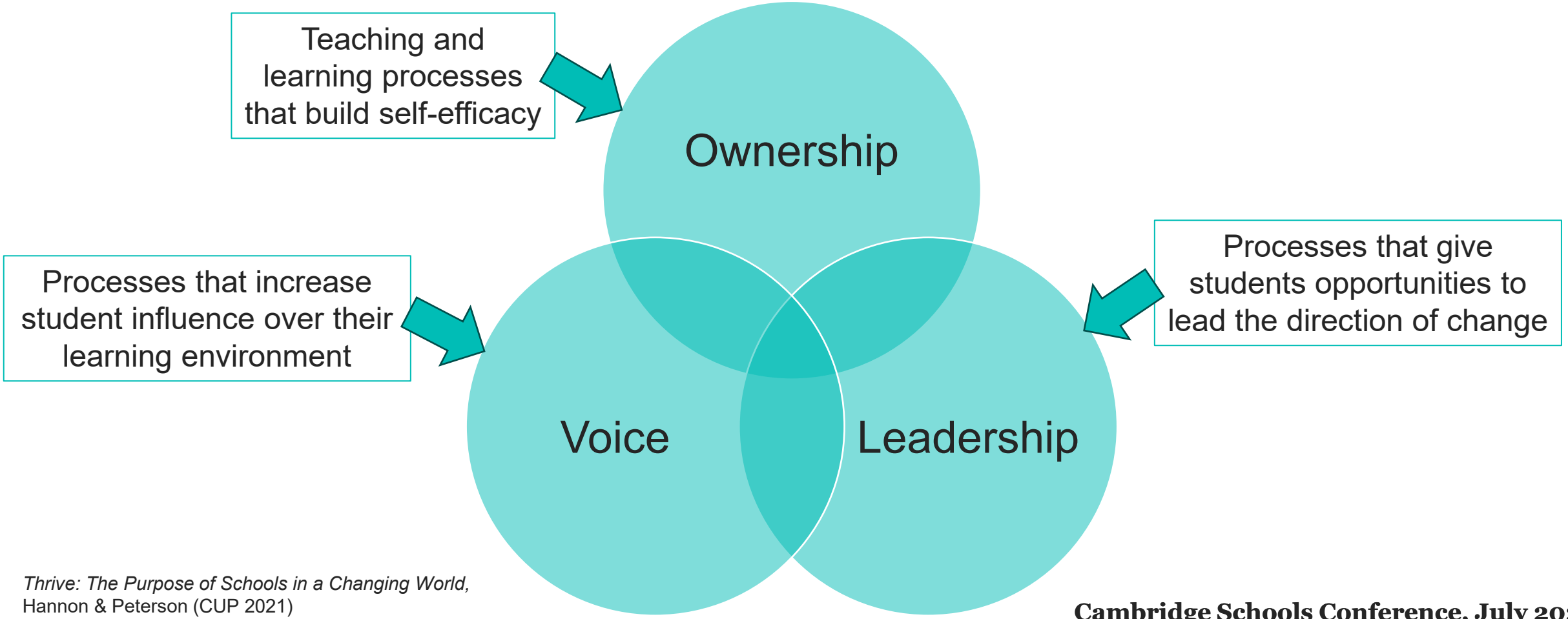
Taking agency



Thrive: The Purpose of Schools in a Changing World, Hannon & Peterson (CUP 2021)

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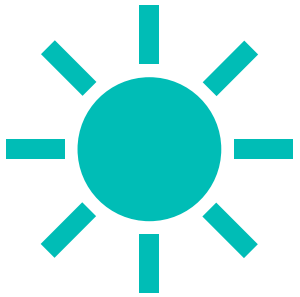
Community action and service

Eco-clubs

Planting trees
Picking up rubbish
Engineering small solutions



Trips

Renewable energy facilities
Local conservation projects

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Sports

- Good for mental health
- Being outdoors
- Natural way to enjoy yourself

- Discuss sustainability in:
  - Participation
  - Large sporting events
    – e.g. Olympics, World Cups

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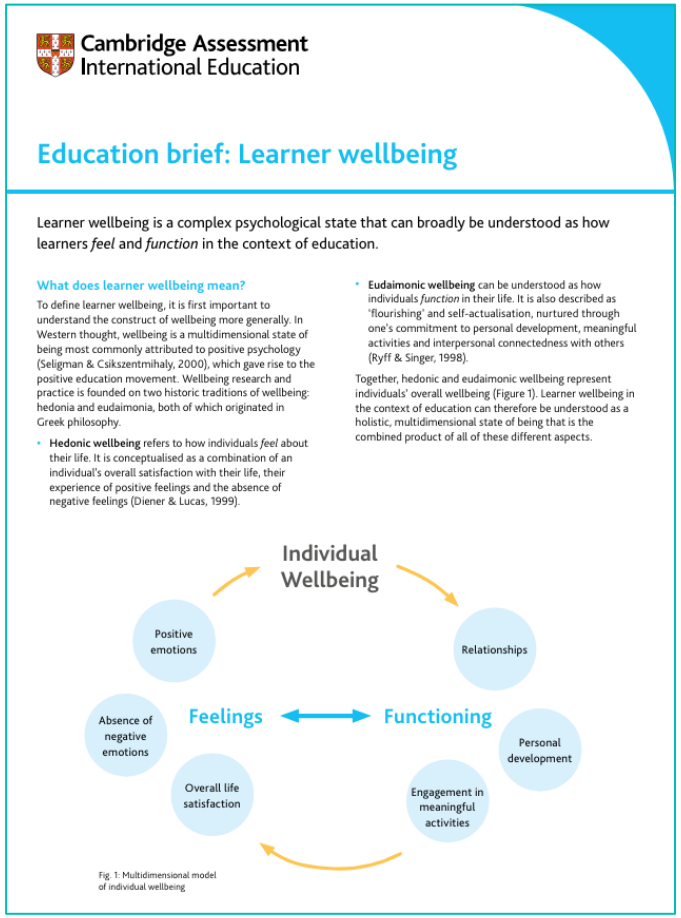
Free resources about learner wellbeing



Cambridge Assessment International Education

Education brief: Learner wellbeing

Learner wellbeing is a complex psychological state that can broadly be understood as how learners *feel* and *function* in the context of education.

What does learner wellbeing mean?

To define learner wellbeing, it is first important to understand the construct of wellbeing more generally. In Western thought, wellbeing is a multidimensional state of being most commonly attributed to positive psychology (Seligman & Csikszentmihaly, 2000), which gave rise to the positive education movement. Wellbeing research and practice is founded on two historic traditions of wellbeing: hedonia and eudaimonia, both of which originated in Greek philosophy.

- **Hedonic wellbeing** refers to how individuals *feel* about their life. It is conceptualised as a combination of an individual's overall satisfaction with their life, their experience of positive feelings and the absence of negative feelings (Diener & Lucas, 1999).
- **Eudaimonic wellbeing** can be understood as how individuals *function* in their life. It is also described as 'flourishing' and self-actualisation, nurtured through one's commitment to personal development, meaningful activities and interpersonal connectedness with others (Ryff & Singer, 1998).

Together, hedonic and eudaimonic wellbeing represent individuals' overall wellbeing (Figure 1). Learner wellbeing in the context of education can therefore be understood as a holistic, multidimensional state of being that is the combined product of all of these different aspects.

Fig. 1: Multidimensional model of individual wellbeing

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Interdisciplinary approach

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Cambridge Global Perspectives™

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Some other cross-curricular ideas

Projects

Competitions

Events

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Any comments or questions?

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Learning and acting together

- Read our introduction paper.
- Complete our survey.
- Join our research community.
- Find out about the latest news, including blogs and podcasts.

cambridgeinternational.org/climate-change-community

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Your feedback

Please let us know your views on this session

Scan the QR code and share your feedback with us