

Reframing Curriculum Through the UN Sustainable Development Goals

Towards relevance, coherence, and deeper thinking in a time-poor, overcrowded system

The contemporary curriculum landscape is increasingly characterised by overcrowding, competing priorities, and limited time. Teachers are expected to cover extensive content while simultaneously developing transferable capabilities such as critical thinking, collaboration, and problem solving. In this context, the challenge is not simply what to teach, but how to design learning that is both meaningful and manageable. One promising solution lies in using the United Nations Sustainable Development Goals (SDGs) as a unifying framework for curriculum design.

The SDGs provide a globally recognised set of 17 interconnected goals addressing complex issues such as climate change, inequality, health, and sustainable communities. These goals naturally lend themselves to interdisciplinary inquiry, offering a coherent structure through which multiple subject areas can be integrated. Rather than adding to curriculum overload, the SDGs can act as an organising framework that reduces fragmentation, enabling schools to consolidate learning into purposeful, connected experiences.

Interdisciplinary Learning Anchored in Real-World Issues

As highlighted in the article, interdisciplinary units are particularly effective in developing critical thinking because they situate learning within meaningful, real-world contexts. The SDGs amplify this benefit by providing authentic global challenges that demand nuanced understanding and multi-perspective thinking.

For example, a unit centred on **SDG 6: Clean Water and Sanitation** could integrate:

- **Science** (water quality, ecosystems)
- **Mathematics** (data analysis, resource allocation)
- **Humanities** (geopolitical access to water, cultural perspectives)
- **English** (persuasive writing, research communication)

In such a unit, critical thinking is not taught as an abstract concept but emerges naturally as students analyse data, evaluate solutions, and synthesise knowledge across disciplines. This aligns directly with the principle that thinking skills are best developed through application rather than isolation.

Addressing Curriculum Overcrowding Through Integration

One of the most pressing issues in education today is curriculum overload. Teachers often feel compelled to “cover” content at the expense of depth and engagement. The SDGs offer a way to streamline this by:

- **Consolidating outcomes across learning areas**
- **Reducing duplication of skills and content**
- **Focusing on big ideas rather than isolated topics**

Instead of teaching discrete units in silos, schools can design interdisciplinary inquiries aligned to selected SDGs, mapping required curriculum outcomes within these broader themes. This shifts the focus from quantity to coherence, allowing students to explore fewer topics in greater depth while still meeting mandated requirements.

Importantly, this approach acknowledges that not all curriculum content holds equal relevance for students’ futures. By prioritising globally significant issues, educators ensure that what is taught is both purposeful and future-focused.

Enhancing Student Engagement and Agency

The original article emphasises that interdisciplinary learning improves engagement by connecting content to meaningful problems. The SDGs strengthen this connection by framing learning within issues that students recognise as important and urgent.

Students are more likely to be motivated when they see their learning as contributing to real-world change. For instance:

- Investigating **SDG 13: Climate Action** can empower students to propose sustainability initiatives within their school.
- Exploring **SDG 10: Reduced Inequalities** can lead to social justice projects or community partnerships.

Such experiences foster a sense of agency—students are not simply completing tasks but engaging in meaningful inquiry with tangible impact. This shift from passive learning to active participation is crucial in sustaining engagement, particularly in an era where students are increasingly seeking relevance and purpose in their education.

Supporting Flexible and Transferable Thinking

A key advantage of using the SDGs as a framework is the development of flexible, transferable thinking. Because each goal is inherently complex and interconnected, students must:

- Consider multiple perspectives
- Navigate ambiguity
- Apply knowledge in unfamiliar contexts

These are precisely the capabilities required for thriving in a rapidly changing world. By repeatedly engaging in interdisciplinary inquiries framed by the SDGs, students learn to transfer their understanding across domains—moving beyond subject-specific knowledge to broader conceptual thinking.

Practical Implications for Schools

Implementing an SDG-aligned curriculum does not require a complete overhaul but rather a strategic reorganisation of existing structures. Schools might begin by:

1. **Selecting a small number of SDGs** to focus on each year
2. **Mapping curriculum outcomes** across subject areas to these goals
3. **Designing interdisciplinary units** that address key questions or challenges
4. **Allowing flexibility in timetabling** to support extended inquiry
5. **Emphasising assessment of thinking and application**, not just content recall

This approach also supports teacher collaboration, as educators work across disciplines to co-design learning experiences. While this requires initial investment in planning, it ultimately reduces workload by creating more cohesive and reusable units.

Conclusion

In a time-poor and overcrowded curriculum, the priority must shift from coverage to coherence. The UN Sustainable Development Goals offer a powerful framework for achieving this by anchoring interdisciplinary learning in authentic, globally relevant challenges. By doing so, schools can foster deeper critical thinking, increase student engagement, and create a more streamlined and meaningful curriculum.

Rather than adding another layer to an already complex system, the SDGs provide a way to organise, connect, and elevate what we already teach—ensuring that education is not only rigorous, but relevant to the world students are preparing to enter.

Here are **practical examples of SDG-aligned interdisciplinary units** you could implement across different year levels and contexts. Each integrates multiple subjects, embeds critical thinking, and keeps workload manageable by aligning outcomes.



1. SDG 6: Clean Water and Sanitation

Unit: *"Water for All"*

Driving question:

How can we ensure equitable access to clean water?

Subjects integrated:

- **Science:** Water cycles, filtration, contamination
- **Mathematics:** Data analysis (water usage, global statistics)
- **Humanities:** Global inequality, case studies (e.g., Sub-Saharan Africa)
- **English:** Persuasive writing, research reports

Learning experiences:

- Test and analyse local water samples
- Compare global water access data
- Design and prototype a simple filtration system
- Write a proposal advocating for water initiatives

Critical thinking focus:

Evaluating solutions, interpreting data, ethical reasoning



2. SDG 13: Climate Action

Unit: *"Our Carbon Future"*

Driving question:

What actions can we take to reduce our environmental impact?

Subjects integrated:

- **Science:** Climate systems, greenhouse effect
- **Mathematics:** Carbon footprint calculations, graphing trends
- **Geography:** Impact of climate change on regions
- **English/Media:** Campaign design, persuasive communication

Learning experiences:

- Calculate personal/school carbon footprints
- Analyse climate data trends
- Investigate local environmental issues
- Develop a school-wide sustainability campaign

Critical thinking focus:

Interpreting evidence, evaluating solutions, systems thinking

3. SDG 3: Good Health and Wellbeing

Unit: “Healthy Communities”

Driving question:

What does it take to build a healthy society?

Subjects integrated:

- **Science:** Nutrition, physical health, mental health
- **Mathematics:** Statistical analysis of health data
- **HPE:** Personal wellbeing strategies
- **Humanities:** Socioeconomic factors influencing health

Learning experiences:

- Analyse public health datasets
- Investigate mental health trends in adolescents
- Design a wellbeing program for the school
- Present findings through multimedia

Critical thinking focus:

Cause and effect, evaluating evidence, problem-solving

4. SDG 11: Sustainable Cities and Communities

Unit: “Designing the City of the Future”

Driving question:

How can we design cities that are sustainable and liveable?

Subjects integrated:

- **Geography:** Urbanisation, population distribution
- **Mathematics:** Measurement, budgeting, spatial reasoning
- **Science:** Energy use, sustainability principles
- **Design/Technology:** Urban design and modelling

Learning experiences:

- Analyse Perth's urban growth patterns
- Design a sustainable city model (transport, housing, energy)
- Use scale drawings and budgeting
- Pitch designs to a "city council" panel

Critical thinking focus:

Systems thinking, trade-offs, innovation



5. SDG 10: Reduced Inequalities

Unit: "Fairness in Society"**Driving question:**

Is our society fair, and how can it be improved?

Subjects integrated:

- **Humanities:** Social justice, inequality, policy
- **Mathematics:** Income distribution, statistics
- **English:** Argument writing, debate
- **Civics:** Rights and responsibilities

Learning experiences:

- Analyse inequality data (income, education access)
- Investigate case studies locally and globally
- Conduct debates on fairness
- Propose policy or community solutions

Critical thinking focus:

Ethical reasoning, argumentation, evidence use



6. SDG 2: Zero Hunger

Unit: *"Feeding the Future"*

Driving question:

How can we sustainably feed a growing population?

Subjects integrated:

- **Science:** Agriculture, ecosystems, food production
- **Mathematics:** Population growth modelling
- **Geography:** Land use and food systems
- **Business/Economics:** Supply chains, food waste

Learning experiences:

- Investigate global hunger patterns
- Model future population growth impacts
- Explore local food production systems
- Design solutions to reduce food waste

Critical thinking focus:

Problem-solving, forecasting, analysing complex systems



7. SDG 12: Responsible Consumption and Production

Unit: *"The Life of Things"*

Driving question:

What is the true cost of the products we consume?

Subjects integrated:

- **Science:** Materials, waste, recycling
- **Mathematics:** Data on consumption patterns
- **Geography:** Global supply chains
- **Design:** Sustainable product redesign

Learning experiences:

- Conduct a “life cycle analysis” of a product
- Audit school waste
- Redesign a product to be more sustainable
- Create awareness campaigns

Critical thinking focus:

Evaluating impact, lifecycle thinking, decision-making



Why These Units Work

Across all examples:

- **Content is streamlined** by integrating subjects
 - **Learning is relevant** through real-world problems
 - **Critical thinking is embedded**, not taught separately
 - **Engagement increases** through student agency and authentic tasks
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✓ Key takeaway:

The SDGs act as *organising concepts*—they don’t add more to the curriculum; they **connect and prioritise what already exists**, making learning deeper, more coherent, and more meaningful.

Assessing interdisciplinary learning requires a shift from traditional, subject-silo assessment toward evaluating **application, thinking, and integration of knowledge**. The key is to assess both **discipline-specific outcomes** *and* the **transferable capabilities** developed through the inquiry.

Here’s a clear, practical approach:

✓ 1. Assess Both Content and Competencies

Interdisciplinary work should be assessed in **two layers**:

A. Discipline-specific knowledge

Ensure curriculum requirements are still met:

- Science understanding
- Mathematical reasoning
- Humanities concepts
- Literacy skills

👉 These can be mapped explicitly to standards (e.g. WA curriculum)

B. Transferable capabilities

Equally important are:

- Critical thinking
- Problem solving
- Collaboration
- Communication
- Ethical reasoning

✅ **Key principle:** Don't assess "everything at once"—be clear about what matters most in the task.

2. Use Rubrics That Reflect Integration

Traditional rubrics often separate subjects. Instead, design **integrated rubrics** with criteria like:

Example rubric categories:

- **Understanding of the issue** (depth across disciplines)
- **Use of evidence** (data, research, justification)
- **Critical thinking** (analysis, evaluation, synthesis)
- **Solution quality** (feasibility, creativity, sustainability)
- **Communication** (clarity, audience awareness)

👉 You can still include subject-specific descriptors underneath each category.

3. Use Multiple Forms of Assessment

Interdisciplinary learning is best captured through **varied evidence**:

Common approaches:

- **Inquiry projects** (reports, prototypes, campaigns)
- **Presentations or pitches** (authentic audiences work well)
- **Portfolios** (ongoing documentation of learning)
- **Reflections** (metacognition is critical)
- **Group products + individual accountability tasks**

✅ This avoids over-reliance on tests, which often miss deeper thinking.

4. Balance Group and Individual Assessment

A common challenge is fairness in collaborative work.

Solution:

- Assess **group product** (shared outcome)
- Assess **individual contribution** through:
 - Reflections
 - Process journals
 - Peer/self-assessment
 - Targeted check-ins

👉 This ensures accountability while preserving collaboration.

5. Assess the Process, Not Just the Product

Critical thinking develops during the learning—not just in the final submission.

Capture the process through:

- Draft work and iterations
- Research notes
- Teacher conferencing

- Checkpoints/milestones

Example:

Instead of only grading a “sustainable city design,” also assess:

- How students evaluated trade-offs
 - How they used evidence to justify decisions
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6. Use Real-World Criteria

Because SDG units are grounded in authentic problems, assessment can reflect this.

Example questions:

- Is the solution feasible?
- Does it consider multiple perspectives?
- What are the unintended consequences?

👉 This makes assessment more meaningful and aligned with real-world thinking.

7. Build in Reflection and Metacognition

Reflection is essential in interdisciplinary work.

Prompt examples:

- What disciplines did you draw on most, and why?
- How did your thinking change?
- What challenges did you face in integrating ideas?

✅ This helps students recognise *how* they are thinking, not just *what* they produced.

8. Keep It Manageable for Teachers

To avoid adding workload:

- Use **shared rubrics across subjects**
- Co-design tasks as a team (divide marking responsibilities)
- Assess selected outcomes—not everything
- Reuse assessment structures across different units

👉 The goal is **coherence, not complexity**

Example: SDG Unit Assessment Snapshot

Unit: Climate Action (SDG 13)

Task: Develop a school sustainability proposal

Assessed elements:

- Science → understanding climate processes
- Maths → data analysis of emissions
- English → persuasive communication

Rubric focuses on:

- Evidence and data use
- Quality of argument
- Feasibility of solution
- Critical thinking

Additional:

- Individual reflection
 - Group collaboration rating
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Key Takeaway

Effective interdisciplinary assessment:

- Balances **content and capabilities**
- Values **thinking and process**

- Uses **authentic, real-world criteria**
- Remains **manageable and aligned** with curriculum