

The Curriculum Story Project

3. The Curriculum Design Cycle

This pack provides examples of how settings and schools have used different “design cycles” to provide a common language and structure for curriculum-making.

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A common language and structure for curriculum-making

A design cycle is a model or framework for curriculum-making that complements the collaborative nature of Interdisciplinary Learning (IDL) projects themselves. A design cycle simplifies the process of mapping out the different stages of an IDL project, and indicates the progression in thinking and learning we expect.

There are many design cycles with varying degrees of complexity and purpose. A basic example might include four key elements:

- Plan and research ideas based on questions or a perceived problem;
- Design possible solutions;
- Select and create a winning solution;
- Test and evaluate the solution.

Design is **an iterative, cyclical process**. A design cycle naturally repeats itself. Once you have evaluated a solution and considered how to make improvements, you may wish to return to any of the previous stages to figure out how to implement them. A design cycle is also **fluid**, providing a dynamic and flexible structure for IDL planning.

The design stages do not have to be completed in a set pattern. For example, you might test someone else's idea in your own setting, before going back to your planning to see how that might change. In short: you don't always have to start with a planning and research phase. You can play with them.

A design cycle presents a common language for planning learning between educators, learners and partners. It transforms curriculum planning into an explorative process that is interactive and inclusive.

A shared, collaborative approach is one of the most challenging and unique aspects of quality interdisciplinary learning. A successful design cycle is collaborative. It provides learners, educators, and partners opportunities to share planning, teaching, and assessment ideas.

A design cycle embraces innovation and experimentation. It is a flexible philosophy of curriculum planning and leaves room for meaningful tangents and new outcomes. It helps move from a standard one-size-fits-all approach to focussed provocations that inspire a broad range of questions from young people themselves.

Dyce School, Aberdeen

A four-week design cycle of enquiry-led learning embedded in a whole-school commitment to outdoor learning.

An expeditionary design cycle for outdoor learning at this primary school gave clarity, a common structure and continuous feedback to curriculum design. The design cycle has helped make a positive shift in teachers' agency, pedagogy and collaboration. The impact of the design cycle has led to increased expectations for all learners and many examples of learner agency and leadership.

The experience of Covid, teaching learners in Hubs, and the return to school after the lockdown was the catalyst for change in Dyce Primary. As a result, staff were much more optimistic about the possibilities offered by IDL and outdoor learning. Previously, the school has benefited from professional learning from many experts on outdoor learning, but it didn't stick, and there was a lack of consistency across the school. The experience of working in Hubs gave staff a great deal of autonomy. With the invitation of Headteacher Jenny Watson to 'experiment', staff created 'Wellbeing Wednesdays', offering themselves an opportunity to go outside and ditch the screens.

A shared language of Outdoor Learning Expeditions

Each year group now goes outside at least once a week, and the design cycle for "Outdoor Learning Expeditions" includes four key elements and stages of enquiry:

- Explore
- Design
- Create
- Share

The concept of outdoor 'expeditions' at Dyce emerged from the lockdown Hub experience as one approach to IDL. The school now plans IDL projects on a four-week design cycle and covers themes that connect strongly with a curriculum subject. For example, 'Monster March' focusses on literacy and art, and the sciences are pushed in 'Wind Power.'

Over the year, there are nine different Expeditions. All stakeholders are involved in "Co-Create Sessions" to decide on the themes for the nine Expeditions. This includes staff, children, parents and school partners.

The design cycle: a way of co-designing with learners, maintaining clarity of outcomes

At the start of each expedition, children are involved in planning – once the teacher asks the initial provocative "big questions", the children's responses are the springboard for the exploration phase. At this stage, partners from business and industry often pose even more challenging questions. For example, when the children were exploring air resistance, a local engineer asked the children how modifying a glider could improve its performance.





Expedition Four – What can fly? 6th - 29th January



Opportunities for personal achievement

- Robots! What can you programme them to do?
- Remote helicopters
- Discovering career pathways in the flight industry

Interdisciplinary Learning

Whole school challenge
 P5 - P7 - Challenge from Emerson
 Modify a basic glider to optimise the flight
 P1 - P4 - Challenge from Aberdeen International
 Airport - Create your own flying machine.

- Week1 - Explore
- Week2 - Design and Create
- Week3 - Share and Celebrate



Expedition 4
 6th Jan – 28th Jan
 What can fly?



- Badminton Tournament organised by P7 Leaders
- RSPB Bird Watch
- Sharing our coding journey

Ethos and life of the school as a community

Numeracy and Mathematics – Focus - Data Analysis
Literacy - Writing focus - Describe and Explain
Health and Wellbeing – Achieving
Technologies
 Technological developments in society and business
 TCH 0-05a/1-05a/2-05a
 Computer Science TCH 0.15a /1 -15a / 2-15a
 Craft, Design, Engineering and Graphics - TCH 0-12a / 1-12a / 2-12a
Science - Forces SCN 1-08a / 2-08a

Curriculum areas and subjects

Educators manages to balance each learner’s starting point with the expectations of covering curricular Experiences and Outcomes (Es & Os). Staff use the four contexts both to frame the planning of expeditions and ensure coverage of Es & Os. The same four-contexts format is used again at the end of each expedition as a self-evaluation tool: “did our learners achieve what we thought they would?”

The 4-week design cycle at Dyce is a collaborative process. The staff shifted their approaches to planning, learning and teaching. They shifted their mindset, understanding the difference between ‘learning outside’ and outdoor learning. Their outdoor learning is designed to enhance deeper learning experiences by harnessing every aspect the outdoor environment offers that the indoor classroom does not. Learners are also involved in the design cycle and can lead the co-designing of expeditions. For example, the school replaced the traditional sports day with a sports festival. The three Primary 7 classes each planned, organised and delivered a series of sports events for the rest of the school to enjoy.

“Pupil voice and leadership is a key driver in all our expeditions. P7 have their own Expedition Leadership Programme, and all teachers encourage their pupils to take the lead in their outdoor expeditions. There is a strong focus on developing skills and supporting pupils to identify and articulate the skills they are developing. Across the schools, Expedition Journals are used for reflection and target setting.”

Emma Shinnie, DHT, Dyce School

Common language, greater inclusion, autonomy for educators

Dyce Primary have discovered that outdoor learning is an inclusive environment for IDL. It is easier to differentiate because of the wide range of possibilities. Thanks to the relentless use of the design cycle and their common language, outdoor expeditions have a structure that allows for more staff autonomy. Also, it naturally leads to learner leadership. The experience of outdoor expeditions also included and empowered the support staff as part of the collaborative process.

“All staff have engaged with expeditions, and have sparked a joy for outdoor learning. However, the learning from the expeditions isn’t limited to the timetabled slot, it now permeates all aspects of the curriculum, and the buzz for each expedition can be felt all around the school.”

Gillian Hewitt, DHT, Dyce Primary School.

The design cycle approach to IDL at Dyce Primary, coupled with the potential of outdoor expeditions, means that IDL now has a common language and understanding across the school. The school leadership encourages further experimentation and innovation with the approach.

“IDL is an evolving story at Dyce. The confidence of staff and pupils is increasing, and the IDL is getting richer. Using the four contexts as a planner shapes IDL as a key part of the full curriculum.”

Jenny Watson, HT, Dyce School

Key features of using a curriculum design cycle at Dyce School

- Outdoor learning is a context for learning that makes strong connections with curriculum subjects
- The outdoor expedition design cycle is strengthened by a clear four-week pattern of outdoor enquiry, and a common language to describe each stage.
- The design cycle has embedded a common language and understanding of the purpose and impact of IDL
- The design cycle embraces the collaboration and agency of educators and learners
- The design cycle provides learners with powerful opportunities for planning and leading their learning
- The leadership of the school is open to experimentation and investing in the staff collaboration required to plan successfully for IDL

Resources:

Expedition Thinglink - providing a detailed overview of each expedition in 2021/2022 <https://www.thinglink.com/card/1542239037505404930>

Badcaul and Scoraig Primary Schools, Highlands and Islands

An enquiry-led design cycle facilitates shared collaborative planning between learners and educators.

Badcaul and Scoraig Primary Schools used an enquiry-led design cycle to allow more significant collaborative planning of IDL between learners and educators. The Es & Os can be ‘covered’ and ‘tracked’, but the real impact is made by moving through the different stages of the design cycle. The design cycle allows for hidden and unanticipated moments of learning to flourish.

The schools started from a belief that learners should know their voice is important and that their questions are valued to develop a lifelong love of learning. Therefore, enquiry-led learning and adopting an enquiry design cycle for their IDL projects complemented this vision. The schools used the enquiry cycle suggested in Canadian educator Trevor MacKenzie’s book, *Dive Into Inquiry*.

Provocations to kickstart the design cycle

One of the critical stages of the enquiry cycle is the use of provocations to kickstart learning through curiosity and wonder. The schools use a variety of provocations to introduce new learning, such as objects, photographs, a book or video; anything that sparks interest.

For example, in an IDL unit on volcanoes, they start with an activity generally done at the end of a unit: making a bicarbonate and vinegar volcano. The learners’ questions come from the provocation and help direct which stage of the enquiry cycle to move on to next. The learners’ questions are valued, recorded, and then organised into key questions for research. The learners use project nests and wonder walls to record their questions and to plot where their research might take them next. As a result, the enquiry cycle is flexible. As learning progresses, new questions are added, thus leading to new lines of enquiry and new research areas to explore.

“Staff are increasingly confident to hand over control of the planning to the children. The focus on valuing questions has led to the development of ‘Wonder Walls’, recording things children are wondering about to inform longer-term planning. This plays to everyone’s strengths and passions.”

Helen Love, former HT, Badcaul and Scoraig Primary Schools

The enquiry cycle has also led to the development of unseen and unexpected learning opportunities. For example, an IDL project using the book *The Lighthouse Keeper’s Lunch* went beyond the Experiences and Outcomes. The learners anticipated building circuits, creating pulley systems, writing stories and creating a picnic.

“When attempting something new like the enquiry cycle, be brave to put your toe in the water. Small steps. Don’t do the whole process, but get there step by step.”

Helen Love, former HT, Badcaul and Scoraig Primary Schools

The successful adoption of the enquiry design cycle also improved the quality and focus of collaborative professional learning. For example, all

teachers in the schools have undertaken a practitioner enquiry, which overlaps nicely with the skills and pedagogy required for the enquiry cycle.

Key features of using an enquiry design cycle at Badcaul and Scoraig Primary Schools:

- The starting point is the learner
- The schools value the questions and curiosity of their learners
- Educators in both schools invested time in collaborative professional learning, such as observing each other's practice and reading books about how to implement the enquiry cycle
- Learning provocations engage and hook learners at the beginning of IDL projects
- Organising and choosing which learner questions to follow is a crucial part of the IDL process
- The schools made the enquiry cycle a visual learning pathway through the use of 'wonder wall' displays
- The schools are flexible about how learners show their learning as a result of the enquiry cycle

Resources

Sketchnotes of the enquiry cycle - <https://www.trevormackenzie.com/sketchnotes>

Create a Project Nest for your inquiry: <https://notosh.com/lab/how-to-build-a-project-nest>

Design provocations for learning: <https://notosh.com/lab/making-your-topic-more-topical>

Provocation examples: "Provocations for every project" (Blog): <https://medium.com/notosh/provocations-for-every-project-c6a913d0bbe9>

Discussion Prompts

You may wish to use these discussion prompts with your team or create an interdisciplinary learning session with colleagues from across your setting. Set aside three sessions to tackle each question in turn - use the time between sessions to research, experiment and probe further.

Session 1: What are the benefits of using a design cycle for curriculum planning and progression?

For example, how could the process of a design cycle enhance current IDL projects, contexts or courses in your setting?

Session 2: What are the challenges for ensuring a genuinely collaborative approach to planning using a design cycle?

For example, how would you invest in the time to create collaborative spaces for educators and learners to plan together using a design cycle?

Session 3: How could you apply the practice of learning provocations to kickstart and enhance IDL projects in your setting?

For example, could you reflect on some recent IDL projects and suggest a variety of provocations that you could use at different intervals to hook and engage learners?

Next Steps

Tell us how it went:

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