



# Architecture & Design Scotland

Ailtearachd is Dealbhadh na h-Alba

## Studies in Shared Learning Spaces

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# Introduction

The Curriculum for Excellence encourages, recognises and fosters learning no matter where this takes place. It recognises opportunities for learning beyond the school walls. Architecture and Design Scotland works with schools across the country to help explore and test ideas for learning in new and existing spaces.

## Tests of Change

Tests of Change is a process that facilitates gradual improvement in the learning estate. It aims to develop a culture of testing to inform investment and approaches to spatial use. It is a process which places learners and teachers at the centre of the decision making process. Any proposed changes are informed by place-based analysis and evidence with an aim to enhance learning and teaching environments.

The following Case Studies focus on six schools that have applied 'Tests of Change' principles in redeveloping their learning spaces. The case studies are part of a series of Studies in Shared Learning which will be available in early 2022. The evaluation of projects and process methodologies outlined below were developed in collaboration with University of Edinburgh, Moray House School of Education.

The process involves the following key stages in establishing a strategic overview of spatial issues and opportunities:

Outcome Planning: Consulting with school leaders and teachers to establish the scope of change and to identify issues and opportunities

Testing Solutions: Workshop participation ('space hacks') that involve learners and teachers to trial temporary spatial solutions

Evaluating Impact: Highlighting observations and findings from the space hack to help inform investment opportunities

# Plan – Do – Study – Act

## *An enquiry model for change*

Tests of Change (ToC) is based on an action enquiry cycle – Plan, Do, Study, Act (PDSA). This 4-step process encourages learners and educators to be at the forefront of problem-solving and decision-making to drive change in their own learning environments. Teachers and pupils work together to explore how transforming learning as identified through ToC goals and using design-principles tools can lead to enhancing the quality of learning in our schools.

Tests of Change is a collective approach to problem solving with learner voice at the core. We have used this PDSA approach in presenting the following case studies.



# PLAN

## Background and Needs Analysis

1. Considering what we want to achieve - our vision/our values
2. Agreeing needs, priorities, spatial analysis
3. Scoping, selecting and mapping for change

# DO

## Testing and Exploring the Tools

4. Exploring and selecting different tools and design plans in line with CfE and curriculum-making.
5. Initiating use of tools, exploratory phase, clear goals, projects, tasks and activities – link to Es and Os.
6. Clarifying timeline and phases.

# ACT

## Outcomes and Next Steps for Sustainability

9. Reflecting and planning next steps, including going beyond the school (external sharing).
10. Designing the subsequent cycle for sustainability and expansion.

# STUDY

## Monitoring and Evaluating

7. Monitoring bespoke toolkit and defining benchmarks for evaluation across all projects and activities.
8. Analysing and reflecting on data/experiences.

# Case Study 1: Our Lady of the Missions Primary School

## *How can we build a Culture of Collaboration?*

### **PLAN (Background and Needs Analysis)**

At the heart of the School Improvement Plan for Our Lady of the Missions (OLM) is a commitment to use innovative approaches to facilitate 21st century learning and teaching practices within the existing buildings and surrounding area.

Working together as a learning community, Visionary Workshops (see page 12) for teachers and pupils helped the school identify two key issues:

- There were lots of pressures on space and the learning spaces did not function well.
- There was a desire to create new experiences in arts, Science Technology, Engineering Maths (STEAM), IT, social spaces and family learning.

As a key outcome of workshops with A&DS the school decided that, because they were not due for major investment, they would build 'a culture of collaboration' in which existing spaces were re-imagined and re-purposed to create new opportunities.

### **DO (Testing and Exploring the Tools)**

The first step was to declutter! Next, learners and teachers together agreed a *Space Strategy* for the School Improvement Plan. Through a series of Space Hacks learners tested these ideas by building 1:1 models of the new learning spaces, trying out new methods of collaboration and solo working.

### **STUDY (Evaluating and Monitoring)**

A team of learners - called the Space Pioneers - helped implement the Space Strategy. Using what they learned from the tests, pupils worked with a designer to create new furniture. They visited the manufacturing facility, put the furniture together and helped their peers use the new furniture in the classrooms. They drew inspiration from parents and grandparents to incorporate classic boardgames in the furniture they designed.

### **ACT (Outcomes and Next Steps for Sustainability)**

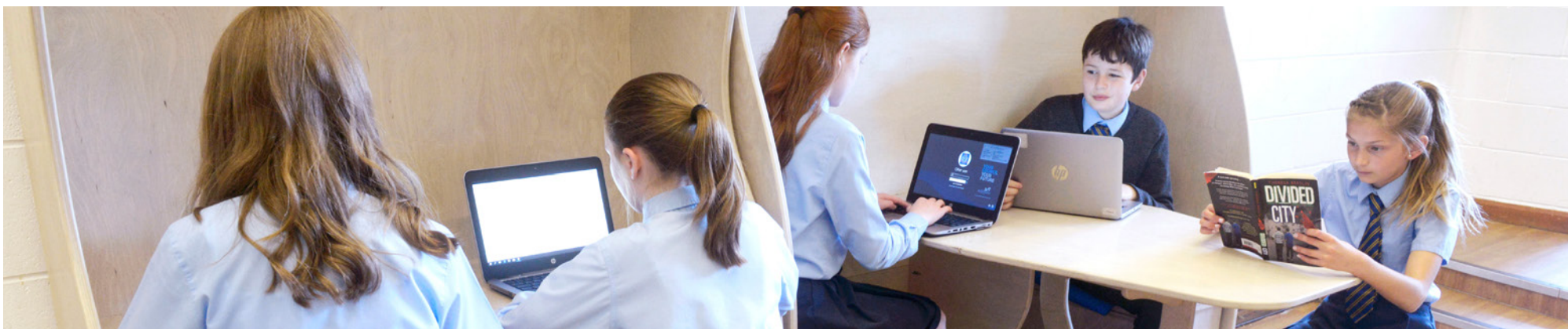
As a result of these initial workshops teachers and pupils maximised the opportunities provided by the Tests of Change process. Drawing on Architecture and Design Scotland's expertise they have been able to embed learning space design within their school long term. These experiences have:

- 'pulled them together as a school,' enabled them to maintain an ongoing relationship with a design consultant and resulted in 'everyone in the school benefitting from the Tests of Change process'.
- demonstrated that pupil involvement became increasingly significant, as they experienced the commitment and drive from the teachers.
- enabled pupils to develop many new skills throughout the Tests of Change process matched to Developing the Young Workforce (DYW) Strategy.
- provided a focal point for identifying and monitoring ways to evidence the Experiences and Outcomes that pupils were gaining by redesigning their learning spaces.









## Experiences and Outcomes achieved through the Tests of Change process

Pupils became 'Space Pioneers' who got involved in every aspect of the design, they were responsible for collecting views from their peers'

**LIT 1-09a**

Pupils worked closely with Architecture and Design Scotland and Flux studios, they visited the design workshop and gained hands on experience and sourced furniture that is now in the school

**HWB 0-13a / HWB 1-13a / HWB 2-13a / HWB 3-13/TCH2-12a**

Pupils participated in Space Hacks a process that uses cardboard boxes, soft furnishing and furniture to test scalability

**MNU 1-11a/ EXA 2-03a**

## Developing our Young Workforce (DYW)

Teachers used the DYW Strategy to help children identify the skills they were developing by participating in the Tests of Change process. Here are a few of the 'I can' level 1 and 2 statements they achieved:

- I can describe different jobs in my community and some of the skills needed for these
- I can learn about the world of work from visits, projects and my experiences
- I believe I can succeed in any area of work
- I can talk about my strengths, interests and skills and show evidence of my progress
- I can identify people in my network who help me broaden my horizons
- I can explain to others my ambitions/what I would like to do and look for ways to achieve them/that
- I believe I can maximise my potential in any type of work





# Case Study 2: Clydebank High School

## *How do learning spaces support voice and choice?*

### **PLAN (Background and Needs Analysis)**

A key priority for West Dunbartonshire Council is to ensure that schools make the best use of available spaces within their buildings, develop digital flexibility and promote outdoor learning. Clydebank High School is a Public Private Partnership (PPP) school with approximately 150 staff who support 1,200 learners and their families. The School Improvement Plan identifies 'health and wellbeing' as a priority through ensuring more choice for learners and that their voices are heard. The focus of this project was to support a learner-led approach to re-imagine spaces to better support socialisation and to test what is possible in the space.

### **DO (Testing and Exploring the Tools)**

Teachers were looking at ways to make better use of learning spaces in order to meet individual learner needs. A group of teachers and young people from S1 through to S6 engaged in a visionary workshop to develop a strategy for change. It was crucial to engage PPP partners in bringing about some changes. Prioritising pupil voice, the learners focused on:

- Break out spaces for individual or group work

- Social spaces and use of circulation spaces for social learning
- Flexible learning space, adaptable for subjects and learning styles

Working with teachers, the learners identified and agreed the spaces to prototype and test new models of learning. They gathered evidence around circulation, materials, health and safety and adaptability. In Clydebank the learners used cardboard, cushions and rugs to create 1:1 scale models.

### **STUDY (Evaluating and Monitoring)**

Through the Space Hack learners tested and evaluated 7 different formats. This helped them to create evidence to inform decisions on future investment in the school.

The spaces they tested included:

- Quiet study booths and standing desks
- Collaboration tables
- Presentation space and drama stage
- Break time space that supported socialisation

Learners were very much at the centre of the ToC

process, enabling them to take on leadership roles and be more creative. With pupils leading the design, teachers noted an increase in engagement and meeting learner needs; resulting in more productivity and innovation within the school. Each test resulted in identifying and emphasising the key priority to extend the choice of spaces. This was built on the premise that pupils would gain a sense of wellbeing through experiencing different spaces conducive to meeting their needs.

### **ACT (Outcomes and Next Steps for Sustainability)**

Testing the prototypes in the spaces showed what was possible. It provided immediate feedback to learners around their ideas, as well as evidence for decision makers. The ToC experience gave pupils an opportunity to be at the heart of decision making - they were integral to the planning and execution process. Teachers were able to further embed a 21st Century learning and teaching model into their practice; a model that recognises that each young person has their own individual needs and the ToC process enabled teachers and learners to identify how those needs might be met. Teachers found ToC purposeful, hands on and experiential.







*“If you get the opportunity to engage in the Tests of Change process, take it... because having the learners driving what they think the learning environment could look like... I felt so proud of the young people... you see them taking on that leadership opportunity, you see the critical thinking skills and creativity skills coming to fruition and really for me, it’s about that kind of ownership and I think that is phenomenal.”*

Clydebank High School Teacher

### **Experiences and Outcomes achieved through the Tests of Change process**

‘It gave us an opportunity for a bit more purposeful pupil leadership in terms of pupil voice... it was more active, it was more hands-on experiential based’

**HGIOS 1.2** Leadership of Learning, children and young people leading learning

‘When I was asking them to jot down their ideas, we got a range of responses, some of them were handwritten, some of them were 3D CAD models, the pupils followed up and wanted to know what was happening next, they were really enthusiastic about the project’

**TCH2-09a/TCH3-09a/TCH2-11A/TCH3-11a, HGIOS 1.5** Management of Resources and Environment for Learning





# Case Study 3: Corstorphine Primary School

*Transforming the School Culture through Space as the Third Teacher*





*“I think it was important because everyone has a different opinion, so we got to like agree on stuff that we wanted and where we wanted to put it.”*

Corstorphine Primary School Pupil

## **PLAN (Background and Needs Analysis)**

Teachers and pupils at the school wanted to investigate ways in which their existing learning spaces could be enhanced. The pupils completed a mind mapping exercise exploring ‘what makes a positive learning environment.’ Teachers and pupils evaluated, discussed and identified key spaces where learning design might lead to renovation and enhancement. They chose a play environment, the school library, a ‘treehouse’, and a wellbeing space. Staff focused on a ‘support for learning’ space.

## **DO (Testing and Exploring the Tools)**

Once the spaces had been identified, the pupils got to work designing the changes. The Symbolic Tools were used to discuss learning and the importance and impact of space, in order to guide their designs. The Physical Tools were also integrated into the design process, to help pupils conceptualise different layouts and spaces for learning. A Space Hack was utilised with cardboard boxes, Lego and Kapla, to plan designs and test what might and might not work in the space. The pupils created 2D and 3D designs in groups, and shared and discussed their ideas. This process helped to develop understanding of scalability and the applicability of their design ideas. It also helped to spark discussions about the importance

of the spaces being inclusive and accessible for all learners.

## **STUDY (Evaluating and Monitoring)**

Throughout the process, teachers mapped their learning space design activities against the key priorities for the school, using documents such as the School Improvement Plan, HGIOS, and CfE. Pupils were at the forefront of co-designing the renovation of the two specialist spaces with inclusivity and pupil ownership at the forefront of activities. One Newly Qualified Teacher (NQT) based their professional inquiry on using the toolkit with pupils, and described how the process had promoted pupil voice and led to the creation of truly inclusive learning spaces. The teachers ensured that all design activities using the tools were clearly linked to learning and the curriculum, and that the impact on the pupils, teachers and wider school could be clearly evidenced.

## **ACT (Outcomes and Next Steps for Sustainability)**

Teachers hugely valued the conceptual nature of the Symbolic Tools. They reported how the tools created new possibilities for discussing with pupils the values underpinning their learning as well as giving a clear strategy for planning designs. The Physical Tools provided valuable opportunities for experiential learning, with the cardboard boxes, Lego, and Kapla, proving hugely engaging for the learners. As well as allowing them to get ‘hands-on,’ teachers saw examples of pupils developing key skills around creativity, leadership and resilience. The school found that a combination of tools (Symbolic, Physical and Digital) proved most effective, and led them to consider ways in which they could enhance pupils’ creativity and the freedom and confidence to combine skills. The headteacher felt that learning space design was beginning to transform the school culture, with teachers and pupils thinking of and looking at spaces in new ways. The school has put in place a strategy for all classes to start engaging with the tools and learning space design, whether that be adapting existing places or creating new ones, with the aim of creating a shared understanding of learning space design in practice.

*“I think the biggest difference that anyone can walk in and instantly see, is it really helps in creating a relaxed and calming atmosphere in the class, and it helps the kids to engage and focus on their learning.”*

Corstorphine Primary School Teacher

*It’s important because we got to choose everything, it’s all of the things that we want, and we chose where to put them, and that’s I think the way we want it to be.”*

Corstorphine Primary School Pupil

### **Experiences and Outcomes achieved through the Tests of Change process**

I recognise that each individual has a unique blend of abilities and needs. I contribute to making my school community one which values individuals equally and is a welcoming place for all.

**HWB 0-10a / HWB 1-10a / HWB 2-10a / HWB 3-10a / HWB 4-10a**

I understand that my feelings and reactions can change depending on what is happening within and around me. This helps me to understand my own behaviour and the way others behave.

**HWB 0-04a / HWB 1-04a / HWB 2-04a / HWB 3-04a / HWB 4-04a**

*“It’s important for children to get involved in classroom design because it’s going to be their environment, and it’s better for you to feel like you’ve picked it and it’s comfortable for you, and it helps you learn more, and it’s just a better environment for you.”*

Corstorphine Primary School Pupil





# Case Study 4: Murrayburn Primary School

## *Using a Shared Symbolic Language for Discussing and Designing Learning*

### **PLAN (Background and Needs Analysis)**

The teachers at Murrayburn were keen to explore the learning outcomes of studying spatial design to see how it could enhance and enrich learning to develop key skills for the future. In collaboration with the pupils, they began by discussing their views on learning spaces in the school, using an Assessment Wheel. Pupils engaged with Symbolic Tools and used them to identify an area of a specialist space that they wanted to (re)design - the classroom wall. The Symbolic Tools were integrated into everyday classroom activities through lesson plans, which developed a common language for the pupils to discuss learning.

### **DO (Testing and Exploring the Tools)**

Teachers and pupils explored how the Symbolic Tools could be used to help drive conversations about space and the learning that takes place in different spaces. Teachers identified how the symbols could be linked to life skills and employability. They also identified how external experts – interior designers

from the Local Authority – could be used to help with the design process. A Dragon's Den-style event was set up, with pupils pitching their design ideas for the classroom wall to an external interior design expert from the Local Authority. The design process included pupils working in groups, sketching out ideas and creating 3D models for discussion with the whole class, before preparing to present their designs.

### **STUDY (Evaluating and Monitoring)**

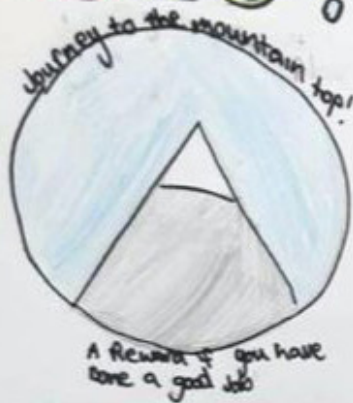
Teachers used the Symbolic Tools for evaluation of the design activities. During the COVID-19 lockdown, the Typologies were used to continue discussions around learning and in particular home learning environments. The Dragon's Den event allowed learners to engage with all Typologies, for example creativity (Fields), collaborative learning (Watering Hole) and celebrating their designs and achievements (Journey to the Mountaintop). Clear links were made to life skills, such as developing leadership and presentation skills, and giving insight into different jobs and employment. These were all mapped against Experiences and Outcomes and the school also

carried out an end of term survey, with many pupils mentioning that the 'Cave activity,' where they worked on creative tasks independently, was their favourite.

### **ACT (Outcomes and Next Steps for Sustainability)**

Learners valued having their own language for different types of learning (collaborative, experiential) and the opportunities it provided for independent learning and their own 'safe space.' Teachers also valued the 'common language' the symbols provided, as it facilitated links across different types of spaces in the school, and different types of learning. The Dragon's Den had a very positive impact, with the pupils seeing their designs come to life and experiencing how they were listened to - pupil voice counts. The success of the Toolkit and learning space design convinced the school to expand the project across its mainstream classes as well as investigate how it could be used in specialist learning environments.

# TYPOLOGIES!



## WALL PAPER



Before:



After:



## IDEA

1. Plant, Drawing & Reading there
2. Calm and Quiet.
3. Cooler full
4. Audio books.
5. Upset/angry ect hang out.
6. flip out table
7. Lego wall
8. ART WALL
9. L.E.D lights

### COLORS



## DRAGON'S DEN

By PGB

Kiriberry, Jade. Jade and Lewis





*“It’s important to have that space because it could be a little bit loud or a little bit too cramped so as you go up the tree, in the cave, it’s a nice place to sit and relax for a minute or two, just to get your head together.”*

Murrayburn Primary School Pupil

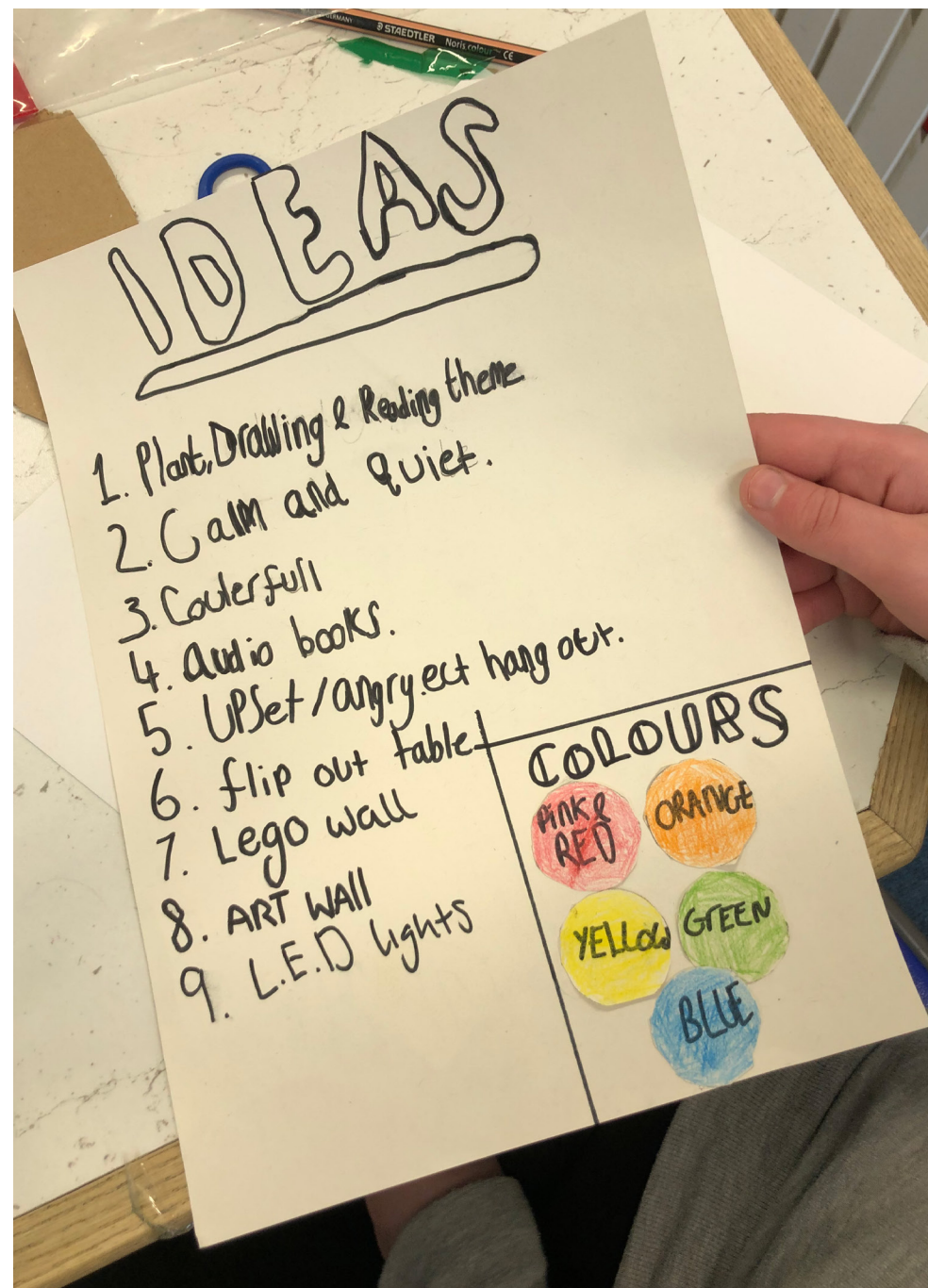
### Experiences and Outcomes achieved through the Tests of Change process

I am learning skills and strategies which will support me in challenging times, particularly in relation to change and loss.

**HWB 0-07a / HWB 1-07a / HWB 2-07a / HWB 3-07a / HWB 4-07a**

Through contributing my views, time and talents, I play a part in bringing about positive change in my school and wider community.

**HWB 0-13a / HWB 1-13a / HWB 2-13a / HWB 3-13a / HWB 4-13a**





*“The cave reminds me of the need for safe spaces in the classroom, but also outwith the classroom for pupils to have time on their own and to be able to reset and reregulate their emotional sense.”*

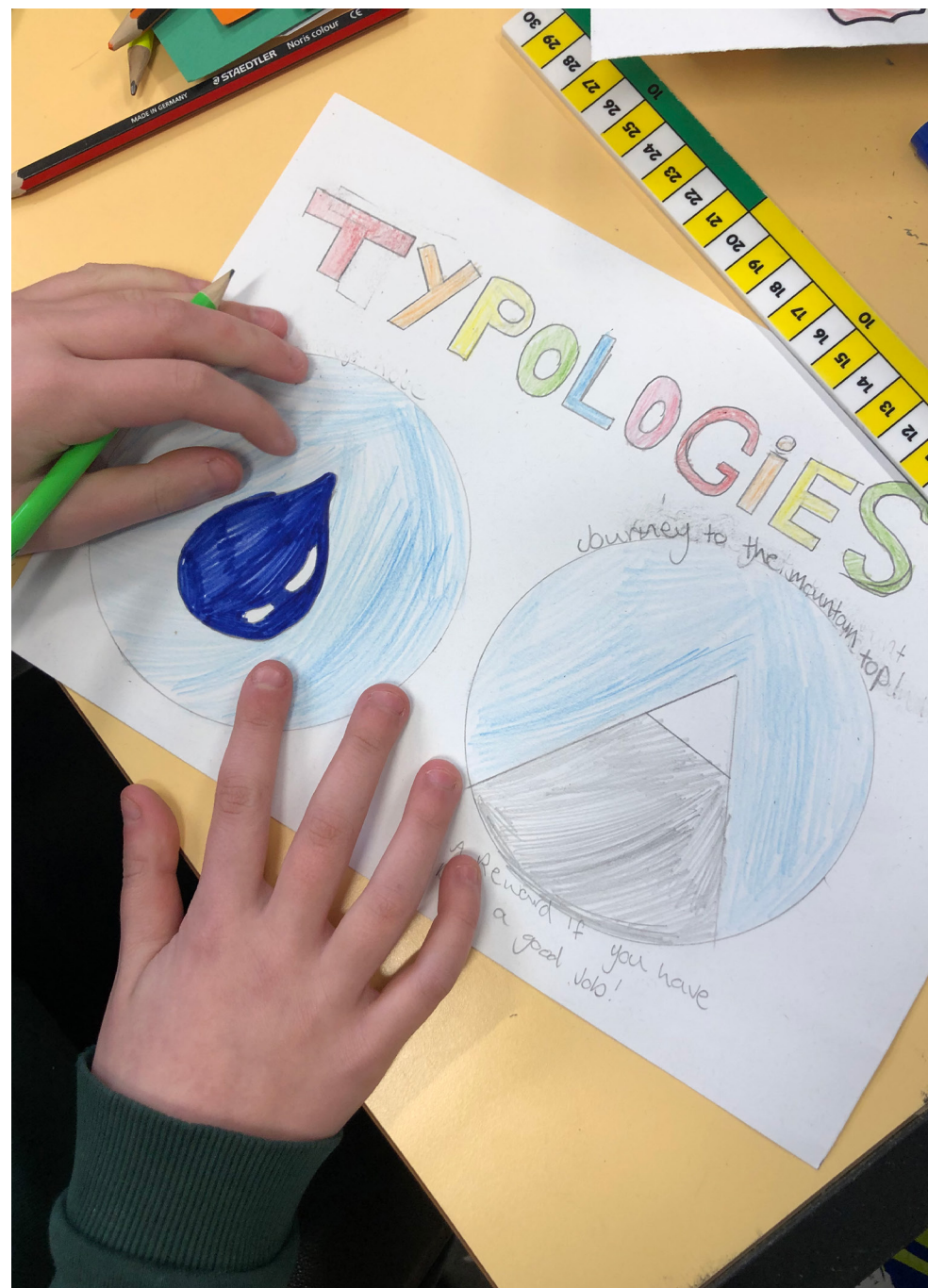
Murrayburn Primary Deputy Head Teacher

*“I would have a nice aesthetic room, so people would have certain spaces and there would be a corner for people to calm down in and loads of things that I would like, and the students would like.”*

Murrayburn Primary School Pupil

*“When I’m planning, I’m thinking about when we come back to the mountaintop, what do I want them to have achieved, and how to get there. I work backwards, and that helps me refine so that there’s space for the children to be creative, rather than it just being all the adult.”*

Murrayburn Primary School Teacher



# Case Study 5: Newbattle High School

## *Developing Leadership and Resilience in a Changing Learning Landscape*

### **PLAN (Background and Needs Analysis)**

Teachers at the school were exploring how to improve online learning experiences for pupils, which took on extra significance during the COVID-19 lockdown. A survey of pupils during the lockdown revealed that they were interested in opportunities to lead their own learning. The school was also looking to renovate a particular physical space in the school, and wanted to explore how to involve pupils in the process. For several years the staff at the school had also been exploring how to utilise shared learning across different spaces connecting different sites through different technologies. This led to a focus on two strands, (i) physical shared spaces and (ii) online (digital) learning spaces connectivity.

### **DO (Testing and Exploring the Tools)**

Pupils and teachers set up a series of workshops and used the Symbolic tools for discussing their learning environments, exploring the design and impact of not only physical and online environments, but also social spaces. Pupils used the Typologies, Values and Factors to begin creating their own designs, and employed digital tools such as Autocad Revit to further develop them. The pupils then worked with College students to revise their designs and present their ideas to the Local Authority. Meanwhile, another

pupil group engaged in shared learning events – using the digitally connected learning space named 'The Cloud' – to lead on a series of learning conversations with student teachers. During these events, pupils presented to student teachers how they liked to be taught and challenged the student teachers to respond with some mini-lessons.

### **STUDY (Evaluating and Monitoring)**

The teachers and pupils examined how the Toolkit Values linked to their own school values, before selecting their own key principles for learning space design. In developing space designs the pupils acted as 'responsible activists,' working collaboratively and developing key life skills. Linking up with College students to further develop their designs, using feedback and discussion, their presentations allowed the pupils to engage in conversations around further education and possible careers, aligning with the school's priorities in Developing the Young Workforce. Likewise, the group of pupils using the shared learning space were also able to interact and take ownership of their learning spaces whilst developing confidence and leadership skills in line with the school's status as a Digital Centre of Excellence.

### **ACT (Outcomes and Next Steps for Sustainability)**

Pupils commented on how the experience increased their confidence and allowed them to develop key leadership skills and take ownership of their learning. Teachers also recognised how in a time of increased uncertainty, particularly around the Covid-19 pandemic, lockdown and cancelled examinations, the opportunity to take control and design learning spaces had increased resilience through the development of new skills and strategies to deal with change. The school committed to widening opportunities for pupils to engage in shared learning, and to provide further platforms for learners to design their own learning environments.

*“You act and work the way they make your room like. You go in and there’s like barely anything on the walls, and it’s such like a boring classroom. You sit there and it’s like, not inspiring.”*

Newbattle High School Pupil

*“It’s a valuable thing for teachers to be able to work in a different space. It’s not giving you like barriers or restrictions. It’s more just making you teach in a different way. You’re having to think about what will work and what won’t work. It’s something different to get you thinking about how you normally teach and how that could be improved.”*

Newbattle High School Teacher

*“It gives the students more of a chance to be creative and share their ideas with people.”*

Newbattle High School Pupil

### **Experiences and Outcome achieved through the Tests of Change process**

I have experimented with a range of media and technologies to create images and objects, using my understanding of their properties.

**EXA 3-02A**

I am investigating different careers/occupations, ways of working, and learning and training paths. I am gaining experience that helps me recognise the relevance of my learning, skills and interests to my future life.

**HWB 2-20a / HWB 3-20a / HWB 4-20a**



# Case Study 6: Craigbank Primary School

## *How do Learning Spaces Support Children's Wellbeing?*

### **PLAN (Background and Needs Analysis)**

In 2017 when Craigbank Primary School was planning renovation works, the school chose to co-create settings that focused on wellbeing as a way to support children to manage stress, feel safe and ready to learn. A key element of the 'Readiness for Learning' (R4L) programme is about placing children at the centre of learning space design, where they can shape and influence spaces to be places in which they feel comfortable and supported. Architecture and Design Scotland supported Craigbank teachers and pupils to identify priorities for their school with a particular focus on wellbeing.

### **DO (Testing and Exploring the Tools)**

Through a series of meetings, workshops and a space hack, teachers and pupils identified the following priorities: the need for a mobile library and quiet corner, presentation and exhibition spaces, breaktime and social area, group work and storytelling spaces and creative storage solutions where specialist resources are grouped centrally. By

testing out different settings 3 issues emerged; 1. A need for a range of small-scale social spaces, 2. Cosy dens, nooks, personal spaces and quiet spaces, 3. Pupils' desire for a wider range of seating options – from formal to laying on mats.

### **STUDY (Evaluating and Monitoring)**

After school renovations took place teachers started to see how redesigning the library 'had completely transformed the way that literacy was looked at in the school'. By changing the building the way it was used had also changed, by transforming learning spaces this greatly impacted on the school's teaching practice. Open plan spaces enabled teachers to fully engage in collaboration and share their skillset with other teachers and pupils.

### **ACT (Outcomes and Next Steps for Sustainability)**

Re-imagining the settings for wellbeing and learning helped teachers further establish the R4L programme. The process led to a sense of collective ownership.

The new open plan layout, created by the learners, has lower noise levels and clear support of the learners' voice and choice. A further review is now needed looking at providing further support to address the gaps in the types of learning that are not possible due to the design of the space. Overall this project enabled teachers to engage in more collaboration and change their approach to teaching as well as enabling pupils to engage in investigative work looking for inspiration from recently designed learning spaces and communicating renovation plans to the wider school community.





### **Experiences and Outcomes achieved through the Tests of Change process**

'Pupils took ownership of the project by organising a forum for parents to find out more about school developments'

**HGIOS 1.2** Leadership of Learning, children and young people leading learning

In contributing to the design of a variety of learning spaces that catered for different needs pupils contributed to making their school community one which values individuals equally and is a welcoming place for all

**HWB 0-10a / HWB 1-10a / HWB 2-10a / HWB 3-10a / HWB 4-10a**





# About

In addition to the Tests of Change process, Architecture and Design Scotland offers design support to education authorities. The service assists at the early stages of school investment and design. We can offer an external view, peer support, facilitation, learning networks and resources.

Drawing from our experience of working across the learning estate, we collaborate with local authorities to regenerate space for learning, by design.

Our focus is on facilitating 'space to succeed' for all learners. We work to these principles derived from policy, and in collaboration with learners, educators and estates practitioners. We aim to:

- Create places where people want to be
- Strive for equity of access
- Connect learners, community and services in learning spaces
- Think about design for adaptability, informed by evidence

We collaborate with local authority partners to unlock the potential in the learning estate by using design.

- Our process is to encourage early participation and engagement to identify learning and teaching needs.
- We encourage collaboration with decision makers to shape the briefing, design development and assessment stages.
- We facilitate the sharing of learning through networks, events and online resources informed by the needs of local authorities.

## **Shared Learning Spaces Research Team – University of Edinburgh**

The Shared Learning Spaces (SLS) Research Team established in 2018 is based in Moray House School of Education and Sport, University of Edinburgh. Led by Professor Do Coyle and research co-ordinator Ramone Al Bishawi, the team carries out innovative cross-sector research connecting and sharing learning spaces across classrooms in schools and universities. A recent focus highlights inclusive transdisciplinary design of spaces and shared pedagogic practices for sustaining deeper learning over time. Our research foregrounds participatory studies where learners and educators co-develop common understanding of learning design based on the impact of spatial literacies. A common symbolic language unites transdisciplinary and sustainable design work from architects through to pupils trialled across different schools, demonstrating how physical, social and cognitive spaces impact agile classroom learning. Building partnerships with experts in industry and education, the SLS Team currently leads the Scottish Alliance - co-ordinating research design initiatives, linked to the world-leading research network (LEaRN), University of Melbourne.

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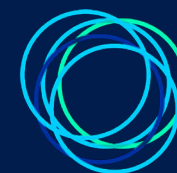
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Shared  
Learning  
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