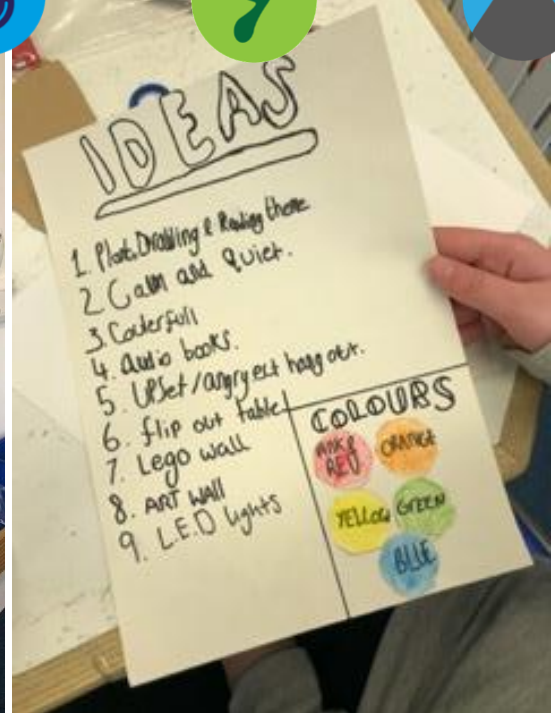
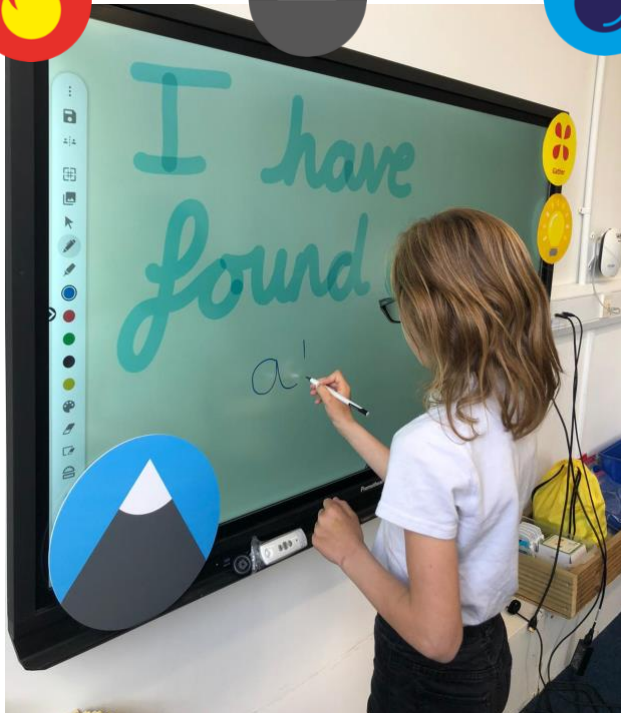
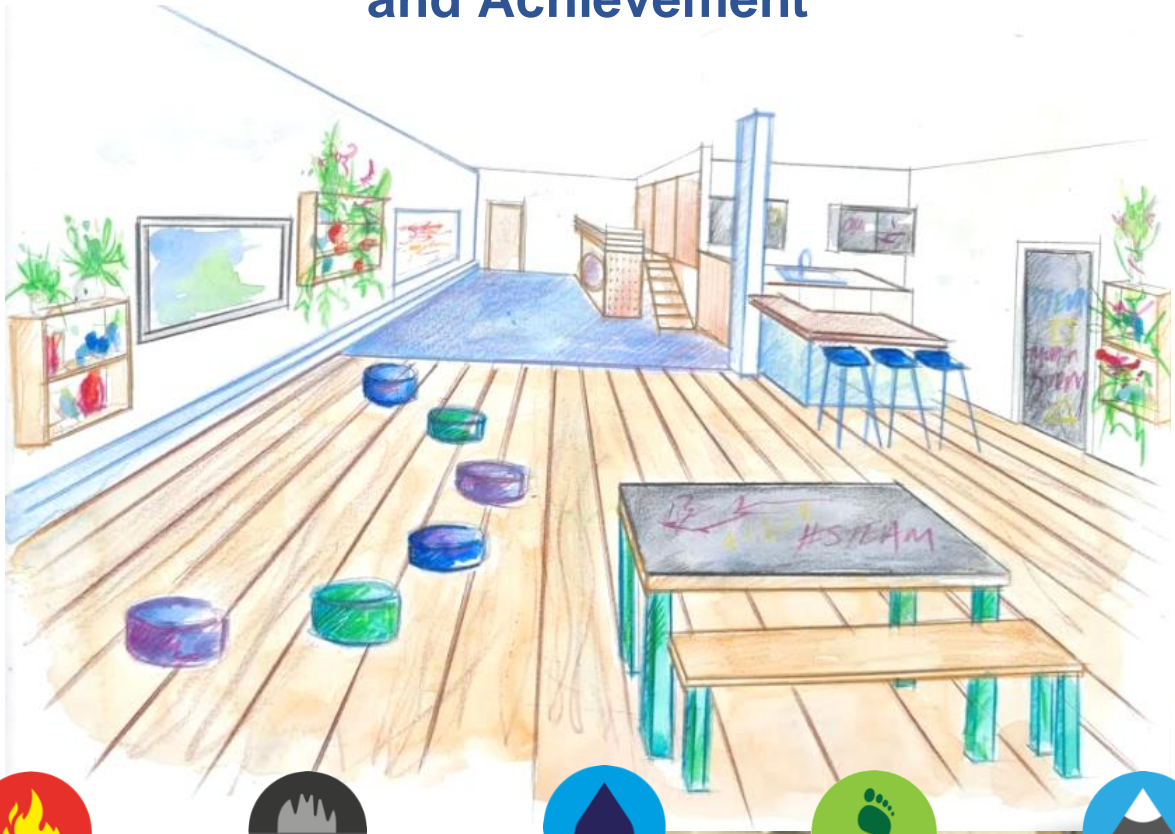







Using a *Shared Learning Spaces Design Toolkit* to Promote Pupil Ownership, Agency, and Achievement



Researching pupil-led learning spaces





The Shared Learning Spaces Team at University of Edinburgh, Murrayburn Primary School, and City of Edinburgh Council developed a partnership to explore how to give young people greater ownership over their learning spaces and develop key skills for the future.

Collaborating with Primary 6 pupils in the new STEAM Room (Science, Technology, Engineering, Art, and Maths), a teacher used a series of symbols from the [Shared Learning Spaces Design Toolkit](#) over the course of a school year (2020/21). These symbols represent the different *Typologies* (types) of learning, and the key *Values* that underpin all learning space design, bringing together the conceptual, physical, and agile nature of learning space design.

				
Campfire	Cave	Watering Hole	Fields	Mountain Top
(Focused, scaffolded input)	(Independent, reflective learning)	(Collaborative learning)	(Experiential learning)	(Celebratory, shared learning)

Learning Space Typologies, adapted from David M. Thornburg's (2007) [Campfires in Cyberspace: Primordial Metaphors for Learning in the 21st Century](#).

The teacher and P6 pupils at Murrayburn used the Toolkit symbols to assess the spaces in their school and to discuss the learning that takes place in them. The pupils identified an area of the STEAM room that they would like to (re)design – **the classroom wall** – with funding acquired to take forward the design. They developed their own designs for the wall and presented these to an interior designer from City of Edinburgh Council in an online 'Dragon's Den' event. The pupils ideas were recorded, and they were asked about their experiences in an end-of-term survey. The teacher also used the symbols for lesson planning and discussed the use of the Toolkit with other staff in the school in a series of interviews. A team of researchers at University of Edinburgh analysed the interviews and surveys.

						
Kindness	Inclusivity	Ownership	Sharing	Sustainability	Uncertainty	Wellbeing

Learning Space Design Values developed by City of Edinburgh Council, Architecture and Design Scotland, and University of Edinburgh.

We wanted to learn more about:

- The impact of learners taking the lead in the design of their own learning spaces.
- How engaging in learning space design might impact on learner confidence, engagement, and the development of life skills.
- The ways in which teachers can use the principles of learning space design to enhance the learning in their classrooms.

The Catalyst

In 2019, Murrayburn Primary school were runners up in City of Edinburgh Council's Future Schools competition to design their own learning space. Staff and pupils wanted to further explore the impact of learning space design, and the school decided to continue to develop and implement pupil ideas on a limited budget. A research partnership was set up with University of Edinburgh, with aim of giving young people a platform to design their own learning spaces that are agile, sustainable, and owned by learners; in other words, **spaces that are integral to their own learning**. Research shows that the ways in which learning spaces are designed has a direct impact on the engagement, achievement, and wellbeing of pupils ([Coyle et al., 2021](#)).

*It's looking at if and how a space can maximize learning. Looking at the space and thinking, how can it maximize learning and how can it enrich learning? How can we get the children excited about learning? I think that's part of the design as well. How can we get them excited to come to a place that they know so well? **Teacher***

The project also aimed to provide opportunities for young people to develop a range of skills relevant to the dynamic nature of employment and life skills in the 21st Century: criticality, resilience, curiosity, and dealing with uncertainty. School staff viewed the design activities as acting as a catalyst for promoting pupil voice and independent learning.

*How can we design lessons that let learning happen independently, as well as with an adult? How does the design mean that we can shift across to child-led learning? **Teacher***

The Role of Interior Design

The class teacher approached an interior designer at City of Edinburgh Council for advice on how to progress with developing the STEAM room. The designer suggested continuing with the participatory design process, using the symbolic language of the toolkit, which could be used for collaboratively assessing the design and use of space. As the designer had led on previous design work in the school, particularly on improvements on the early years' spaces, additional support learning environments and community hub, there was a shared vision and continuity to the design process.

There was an emphasis on creating dynamic, inclusive environments that supported creative learning in an agile manner, and that also served the local community. Sustainability was also a key consideration in the design. Throughout the process the budget and resources were used sensibly; for the final design, minor decoration works were arranged in the summer holidays which meant less disruption than getting contractors in within term time.















Developing a Common Language

The Typologies and the Values were used to organise everyday classroom activities through lesson plans.

When I'm planning, I'm thinking about when we come 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. Teacher

The symbols also provided a common language for the pupils to discuss their learning with the teacher. The learners were able to identify and communicate the type of learning they enjoyed, for example independent learning as represented by the Cave, and the teacher was able to plan around this.

The Typologies allow for more of that discussion, a learning conversation. I'll say to them, what part of the lesson did you enjoy or which bit did you think maybe you learned the most. They're quite good at saying, oh, actually, the Cave part I love. Teacher

Monday	8:45am – 10:30am / 11:00- 12 :15pm
	Cave Activity 8:45-9:05 10 min PPT on OneDrive
	Campfire: Big Food chain examples- hats
	Watering Hole: Omnivore/ Herbivore/ Carnivore cards round room- Complete VENN diagram with partner
	STEAM Challenge/Fields: Create a food chain paper chain
	Mountain Top: Round Screen / Twitter
Tuesday	8:45am – 10:30am / 11:00- 12:15pm
	SOFT START WITH P6
	Cave Activity: Quick start invention: COVID machine Swap classes at 8:50am
	Campfire Activity: Sweet classification of animals
	STEAM Challenge/Fields: Create own animals! Create-ture
Wednesday	8:30am- 10:00am/ 10:30- 11:45am
	SOFT START WITH P5
	Campfire Activity: Starter: Concept Cartoon 7.3: Plants and Animals Omnivore/ Herbivore/ Carnivore cards in envelope- whole class Venn diagram – on smartboard
	Cave Activity: Profile Jotter Food chain activity
	STEAM Challenge/Fields: Board Game: Food Web Cut cards Groups of 6
	Mountain Top: Discuss food web

Shared Learning Spaces

The impact of COVID-19 lockdown in January 2021 meant that plans for the pupils to begin design of their learning space had to be put on hold. However, the Typologies and Values continued to be used by the pupils and teachers during home learning. In online lessons, for example, pupils were encouraged to look at and explore their own home learning environment.

The pupils talked about the Cave symbol, which they saw as a 'safe space' for independent learning. They identified different spaces at the home which they viewed as their 'Cave,' such as their bedroom or living room. In this way, the teacher was able to continue to make connections and facilitate discussions around learning. The teachers also saw potential for the symbols to be translated to any learning context.

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

The Dragon's Den

Once the pupils returned to school after lockdown, they focused on preparing their designs for the Dragons Den presentation. They had already identified the classroom wall as a 'blank space' in the room that they would like to be more 'colourful' and accessible. The learners worked in groups of four or five to create their designs, first sketching out their ideas, and then making 3D models and putting together display boards for the presentation. They discussed ideas as a whole class to give each other advice and suggestions.

Throughout the process the pupils referred to the Typologies and Values and used them to justify their design decisions. As they pitched their designs to the interior designer during the online Dragon's Den event, they talked about having spaces for example creativity (Fields), collaborative learning (Watering Hole) and celebrating their designs and achievements (Journey to the Mountaintop). They also talked about why it was important to have inclusive spaces where all learners felt a sense of belonging. Through the process, the pupils began to develop a clear connection and ownership of the learning space.

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. Pupil

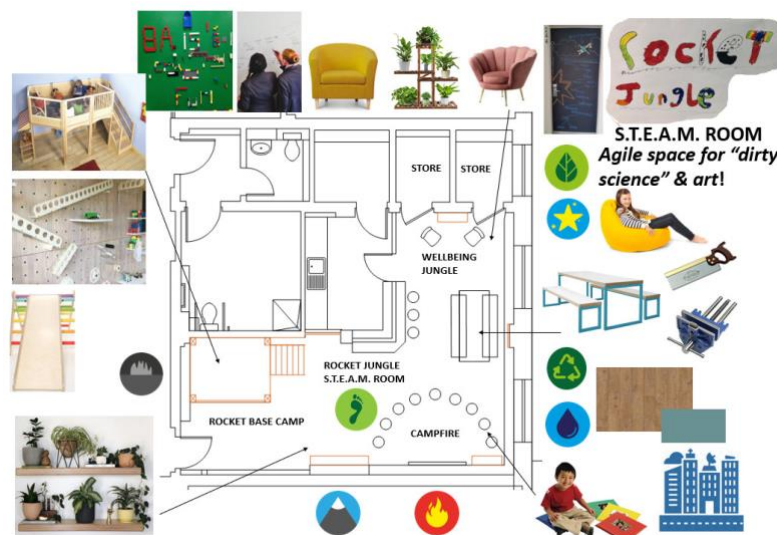
People would have certain spaces and there would be a corner for people to calm down in and loads of things that I would like, and the students would like. Pupil



The interior designer developed a design based on a collective of the ideas and continued to use the symbols to present ideas back to the pupils and engage in further design development.

With the pupils using the Typologies and Values to present their ideas, there was a really positive shared understanding of the ideas. Hybrid Design sessions over Microsoft Teams were quick and dynamic allowing us to engage with more pupils. It allowed me to easily present the design development in a way that demonstrated how the environment factors could inform, achieve and inspire their designs and values. Interior Designer

The interior designer gave advice on inclusive and sustainable decoration, upcycling of existing equipment, adaptations and procuring agile furniture. This allowed for a basic 'refresh' of the space, clearing away some of the more traditional furniture and purchasing resources to give a blank canvas with enough 'agile furniture' to assist with the transition to a new environment.



Pupil Ownership, Agency, and Achievement

The project activities allowed the teacher make links to life skills and employment. The pupils were able to develop their creative, leadership and presentation skills, as well as building resilience and problem-solving capabilities. These could also be linked directly to key documents for practice, such as the Curriculum for Excellence Experiences and Outcomes (Es and Os), How Good Is Our School (HGIOS) and the Circle Document.

HGIOS 1.2 Leadership of learning: Children and young people leading learning.

Es and Os, HWB 2-13a: Through contributing my views, time and talents, I play a part in bringing about positive change in my school and wider community.

The majority of pupils commented positively on the project in their surveys, with common responses including that it was “fun” (10 pupils) and “exciting” (14 pupils). Some said that they had particularly enjoyed being creative, working in teams, and having the responsibility to develop their “own” designs.

It felt amazing because you can do your own design. Pupil

It felt like you had responsibility. Pupil

An overwhelming majority of the Primary 6 pupils (38; 95%) said that they thought learners should be able to design their own learning spaces. Several suggested it was an important means of expressing their views and creativity and showcasing their ideas. Some pupils felt that it was an important way to come up with, share and showcase their ideas.

So you can express your ideas. Pupil

Yes, because it frees our minds. Pupil

Several pupils suggested that learners should be able to design their learning spaces because they were the people who ultimately would be using the spaces and spend the most time there; as such, they would be best placed to decide how they should be designed for learning. One pupil even stated that learners “**should have a right to design classes.**” The class not only developed a connection to the learning space but also felt a sense of agency over the design of the STEAM Room and their own learning taking place within it. The class teacher was particularly pleased that pupils felt a sense of pride and achievement through their work in the project, and a confidence in their abilities.

They felt successful. I saw individuals feel really proud of themselves. The personal achievement and the way they viewed themselves was very positive. Teacher



Next Steps

As a direct result of the pupil engagement the interior designer created an innovative 'Interactive, Agile STEAM Wall,' with a bespoke peg board and agile Lego board system. The space will be used both as the STEAM room and as a hub space for the whole school approach to develop and adopt use of the toolkit. Research is planned on the *impact of the new space design* on pupil engagement and achievement.

The Toolkit was used with a variety of different learners and across different year groups including Primary 4 and 5, but the design activities involved only Primary 6. Though several staff recognised that the toolkit could be used in a variety of different educational settings, some others were less convinced. Further exploration of how the toolkit and its underlying principles can be applicable across different settings and age groups is required to develop a 'whole-school approach' to learning space design. To this end, the school is planning whole school training on learning space design in October 2021.

The challenge is making sure that learning spaces and learning environments are bumped right up the priority list, and actually in the forefront of managers' and staffs' mind that it's actually key and actually crucial in terms of engagement. You're not going to get anywhere if the learning space is not designed well. **Deputy Head Teacher**

Key findings:

- The *Shared Learning Spaces Design Toolkit* allowed teachers and pupils to develop a common language for learning and drive "learning conversations," which helped to maintain engagement with some pupils during the COVID-19 lockdown.
- Using the Toolkit in learning space design activities, including the Dragon's Den, developed pupil ownership of their learning spaces and promoted pupil agency in making decisions about their own learning.
- Engaging in learning space design created a platform for pupils to develop communication, problem-solving, and creative skills. It also raised confidence and promoted a sense of achievement in pupils and pride in their learning.

Recommendations:

- There is scope for expanding use of toolkit in different learning spaces and settings and communicating the benefits for teachers as well as learners.
- An extended study of a school-wide approach to learning space design would provide further evidence of how these approaches can be embedded in practice.
- Further exploration of the impact of new learning spaces, particularly on the pupils that helped to design them, is vital.

Project Team

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