A & DS

Furniture, Fixtures and Equipment
Toolkit and Tips

A practical guide to furnishing and equipping spaces and settings to deliver environments that promote learning

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Introduction

The Scottish Government's Curriculum for Excellence brings a holistic approach to more effective learning and teaching. 'This is driving changes to the concept of the school – its purposes, functions, design and the ways spaces are used'. They want to ensure school learning environments are places people and communities can enjoy using and 'which are well designed, maintained, managed and which encourage continuous engagement with learning'. *(Extracts: 'Core facts overview, Building Better Schools: Investing in Scotland's Future' November 2017)*

Scotland's young people need to be confident, articulate and creative in their learning, developing academic, vocational and workplace skills. The drive is to ensure that both learners and teachers think in new and imaginative ways about their learning environment, and the contribution this can make to effective learning taking place.

To ensure that schools are prepared for the new innovative Curriculum for Excellence, a national review of the existing school estate has taken place. Part of this review has focused on the appropriateness and suitability of learning spaces as well as furniture and equipment within it. This is to ensure that it is fit for purpose when delivering learning and teaching, leisure and social activities and the health and well-being of all users.

In addition, it is recognised that with the relentless development of technology, approaches to knowledge acquisition and learning are rapidly changing – schools need to ensure that they provide learning environments that support this change. The 2016 Scottish Government publication 'Enhancing Learning and teaching through the Use of Digital Technology – a Digital Learning and Teaching Strategy for Scotland' explores this in detail.

Many schools are excited about this focus and in collaboration with pupils and staff have actively explored the potential opportunities and benefits. One example is the Mi:SPACE project carried out by Midlothian Council as part of the Inspiring Learning Spaces initiative, which explored two aspects of suitability:

• Changing classrooms based on learner engagement as a learning exercise, supported by investment in furniture, fittings and equipment (FF&E)

• Using classrooms as a setting to support project-based learning enabled by props, scenes and problems

A common issue to emerge from the Mi:SPACE project related to the appropriateness of FF&E, the processes for selecting new resources and exploring whether there was any guidance for its use. They also explored repurposing existing resources and using the knowledge gained to seek specific routes to procurement, design and support and create learning spaces that supported and enhanced effective learning.

'Considerable evidence shows that there is an explicit relationship between the physical characteristics of school buildings, the spaces within them and educational outcomes'.

Optimal Learning Spaces, SCRI Research Report, 2009

Background

In late 2017, the Scottish Government revised guidance concerning the School Estate Core Facts; condition and suitability. The Suitability Core Facts contains a section on the appropriate range of resources of furniture, fittings and equipment (FF&E) This is to ensure that it is fit for purpose and that the furniture fittings and equipment do not inhibit learning.

The Mi:SPACE Project
The Mi:SPACE project carried out by Midlothian Council as part of the Inspiring Learning Spaces initiative explored two aspects of suitability:

[a] changing classrooms based on learner engagement as a learning exercise supported by investment in FF&E.

[b] using classrooms as a setting to support project based learning enabled by props, scenes and problems.

A common issue to emerge from this project relates to the appropriateness of FF&E, the route to selecting resources and any guidance for use. This includes re-purposing resources already within the school and using this knowledge to seek specific routes to procurement, support and design as appropriate.

The key questions are:
Are we using the most appropriate FF&E for the different range of learning experiences we want to support?

How do we know?

How do we re-use what we have or get what we need?

Overview of Mi:SPACE and Suitability Core Fact

mi:SPACE

Mi:SPACE Findings

Empower Learners

By empowering learners in the design of their environment they became eager and active participants who were fully engaged, resilient, and highly-motivated; they are more able to take responsibility and exercise choice.

Encourage Movement

The theme of movement and activity was worked on in most classes –something that is often discouraged: 'Sit still', 'Don't swing on your chair', 'Stay in your seat please'.

Letting Go

One of the barriers faced in the Mi:SPACE project, and in the further progression of this work, is being able to challenge the conventional thinking and traditional view of what a space should be and how it looks and works.

The teachers and staff involved in the project reported that they found this initially quite hard to overcome, as it felt like a loss of control.

Develop Independence

Feedback has shown that pupils are more independent in their learning and able to demonstrate critical thinking and creativity when faced with a challenge, which has been demonstrated through the ongoing STEM projects

Improve Concentration

With teachers and staff embracing wobble stools, standing desks and inflatable sofas there has been a clear shift in practice as well as an improvement in engagement and concentration by pupils.

Team Effort

Those who have confidently taken on this work and made significant and positive changes, are those that have been supported well by their **school management**, colleagues and parents. This shows a change in mindset across a much larger group than just a single classroom, and in fact helps to show that this movement away from convention is possible throughout a greater learning community.

Suitability Core Fact

Schools need to be fit for purpose 'when delivering the learning and teaching, leisure and social activities and the health and well-being of all users as part of Curriculum for Excellence'.

The Suitability Core Fact: Building better schools: Investing in Scotland's Future

Each school is different, spaces are different and pedagogical approaches vary from school to school and from room to room.

There is no one 'right' design that meets the needs of all learners and teachers. Even individual learning spaces in the same school will serve different functions and approaches both for learners and the wider school community.

With the rapid development of technology and learning, the changes and demands on facilities and spaces will continue to develop, the learning journey will never end. Establishing the suitability of all spaces to cope with this before any work is undertaken is vital.

When considering all learning spaces, it is vital that they provide great facilities for the whole learning community, including those with disabilities or requiring additional support.

Inspiring Learning Spaces

In August 2014, the Scottish Government made £5 million available to encourage local authorities to imagine teaching and learning spaces differently. Inspiring Learning Spaces (ILS), administered by Scottish Futures Trust, did not set down a list of criteria of the projects. Applicants were encouraged to think creatively and to find low-cost interventions which made high impacts.

In collaboration with SFT, Architecture & Design Scotland captured learning on the early impacts and benefits of the ILS projects based on interviews with 20 project leads.
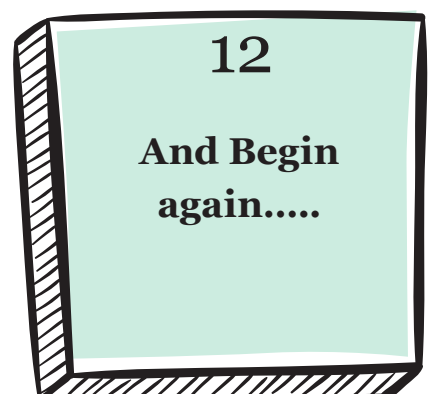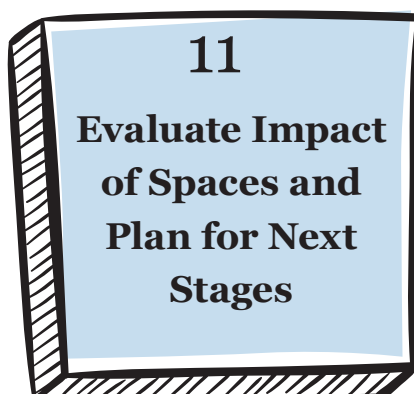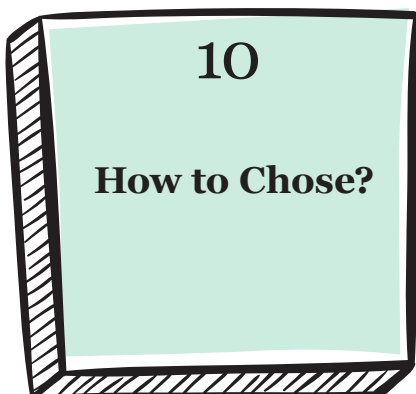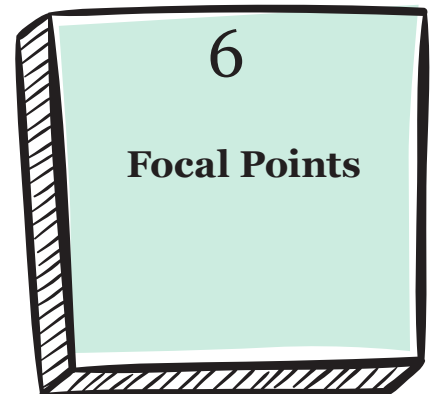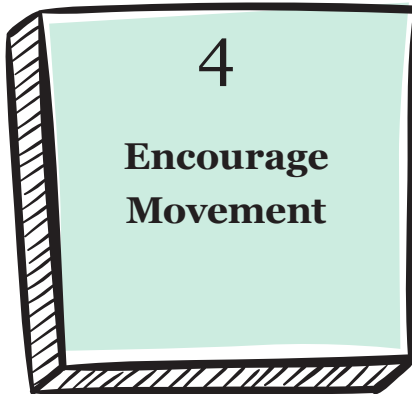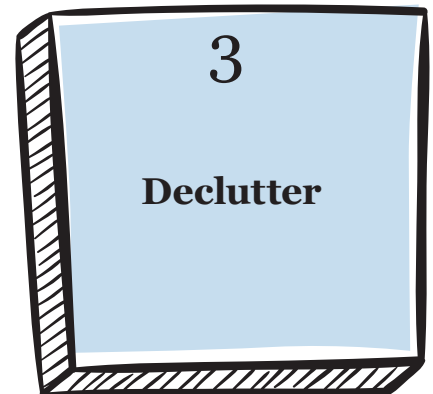
The majority of the projects fell into three broad categories:

- Flexible learning spaces in which to explore new learning styles;

- Vocational training facilities;

- Digital and virtual classrooms which expand the use of technology in learning.

Toolkit and Tips

The 12 areas below highlight points for consideration when furnishing and equipping spaces and settings that deliver environments that promote learning.

1
Empower Learners and Engage Stakeholders

2
Use Research

3
Declutter

4
Encourage Movement

5
Spaces for All – Think Additional Support

6
Focal Points

7
Plan for Technology

8
Leadership and Professional Development

9
Test and Trial

10
How to Chose?

11
Evaluate Impact of Spaces and Plan for Next Stages

12
And Begin again.....

1. Empower Learners and Engage Stakeholders

Who are the people that order new furniture and equipment?

Those using learning spaces everyday are the real experts in how the spaces are used and should be the people to identify what is required to makes spaces more effective.

Many staff and students have only been used to one or two types of learning space and are not aware of the choices of space and equipment available to them. Letting staff and students explore examples of other spaces and settings will help them know what they don't know. The school community needs to set expectations and purpose, not a random wishlist.

All stakeholders need to share and 'buy into' the outcomes that are being sought. For example; ensuring the learning environment develops more independent learners, not just better furniture.

It would be helpful for teachers to challenge answers and create debate to come to a joint consensus as to what would work – how will that improve independence? Why is that needed?

Activities to engage stakeholders

- 'Love it/Loathe it' activity – ask staff and students to evaluate what they love, and loathe, about the current learning space. Make sure you don't throw away what works well – and also address what doesn't work well.

- A blank canvas – completely clear out the space that you are going to refurbish. Allow students and staff to 'plan out' what could work in that room.

- Preferences Activity – ask stakeholders to give a first response to questions such as 'creative or calming', 'mobile or fixed ICT', 'bright or subtle', 'uniformity or variety'.

- Create a page on Pinterest for all to Pin ideas. E.g. furniture, equipment, colours etc.

Top Tips

- Develop student design champions.

- Provide learning opportunities for staff, students and stakeholders to see what is good out there. What have schools done well that we can follow? What makes good design?

- Agree what the school is trying to achieve with new design.

- Create a timeline for change.

- Communicate regularly – through face-to-face meetings or via online strategies, e.g. Facebook or Twitter.

- Provide an online space for students to share ideas – class Pinterest group for example.

- Provide online space for stakeholders. working on the project – GLOW.

2. Use Research

## The impact of School Infrastructure on Learning

Clever Classrooms

The 'Clever Classrooms' research by the University of Salford 2015, led by Professor Peter Barrett et al, made detailed assessments of 153 classrooms in 27 primary schools in three UK regions in order to identify the impact of the physical classroom features on the academic progress of the 3,766 pupils who occupied those classrooms.

'The research study confirmed that variations in the physical design aspects of their learning environments explained 16 percent of the variation in the learning progress made by the 3,766 pupils over one year and averaged across the three subjects.'

'Once pupil effects had been controlled for, only seven key design parameters were identified: light, temperature, AQ, ownership flexibility, visual complexity, and colour.

The proportions that each design parameter contributed to variations in learning progress across the sample of UK schools are shown in the graphic, all of which made a statistically significant difference.'

This is reinforced by the 2019 World Bank report - The Impact of School Infrastructure on Learning: A Synthesis of Evidence

Contribution of each classroom measure
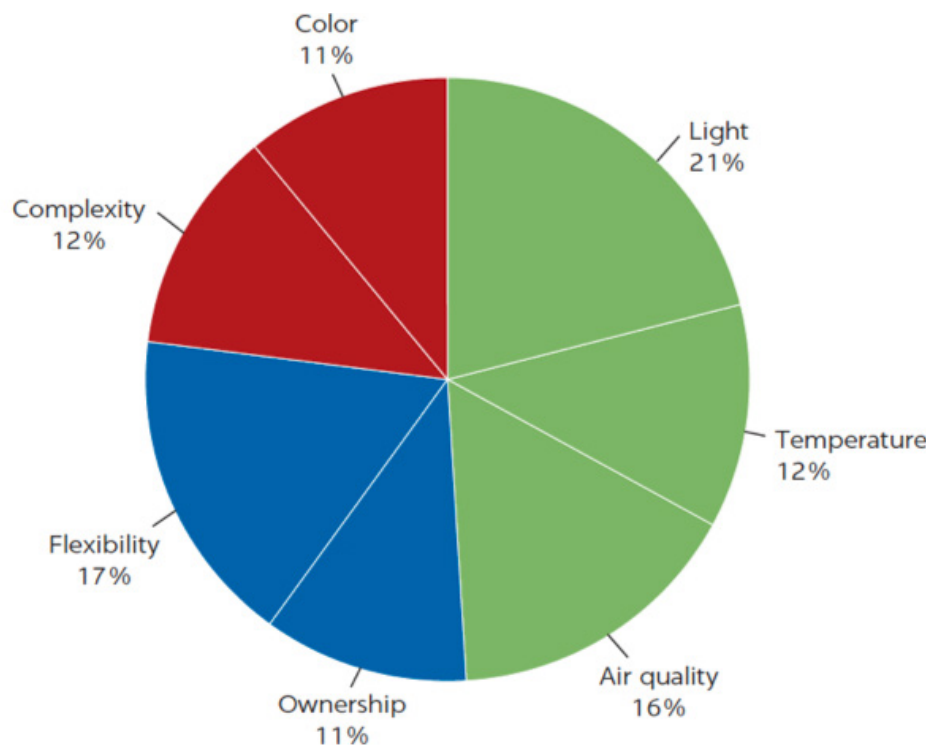
Source: Barrett et al. 2015.

3. Declutter

The less clutter there is, the more flexible the space is. The greater the flexibility the easier it will be for students and staff to create and own their unique learning environment through clear learning focal points, easily adaptable furniture layouts and the ability to change to meet the needs of each lesson.

We all keep stuff as 'it will come in useful one day'. The result is spaces become increasingly cluttered, and less easily reconfigurable and agile. We now know that this can affect the quality of learning and engagement by students.

Even the best learning environment can be spoiled by a confusion of coats, bags and other 'stuff' which has cascaded onto the floor upon entering a room. This will reduce flexibility, reduce the clarity and focus of the environment and become a distraction to learning.

Think about your movement around the space, what do you need to make the new space? Can you see that there might be any problems with the new learning space you have designed - is it complicated, or distracting, does it take a long time to rearrange the classroom?

Mi:SPACE Next Steps

Top Tips

- Complexity - declutter, hire a skip, don't 'rescue' other peoples discards.

- Light - let there be - don't cover glass.

- Connections - Make links between spaces which can then encourage additional learning support spaces.

- Choice - let students have choice around room layouts and use.

- Flexibility - change room layouts to match needs of learning - is it easy or a 'chore'? If a chore, what can you do to make it easier?

4. Encourage Movement

Young Bodies are not designed to sit still!

There are still hundreds of classrooms where students enter and are told to sit down and be still for hour after hour. Students spend many hours in school sat down, often in rows of uncomfortable chairs. Add to that the amount of time they spent sat down in front of a television, or on a computer or other device and it is quite conceivable that our young people spend twelve or more hours a day sitting down.

It is known that on average students aged:

- **6-10 can't sit still more than 5 minutes**
- **11-15 can't sit still more than 15 minutes**
- **15-20 can't sit still more than 25 minutes**

(Source: Dr Dieter Breithecker, Head of the German Federal Institute on the Development of Posture and Exercise, and a member of Ergonomics for Children an Educational Environment. Quote published in Bodies in Motion, Brains in Motion: Movement makes kids better students).

Ergonomics

Dr. Dieter Breithecker, Director, Federal Institute on the Development of Posture and Exercise, notes that sitting still places stress on tissues and systems of developing bodies.

Being still, they become more uncomfortable, get increasingly tired and are less productive. They become "deprived of critical physical and sensory experiences that are essential for physical and mental growth".

It is well known that being able to move around increases oxygen supply and is essential for stimulating cognition. When students are physically engaged, specific hormones are released that have a positive influence on brain activity. As a result, attention spans grow longer, and the ability to concentrate improves.

Research proves that this relationship between movement and brain activity leads to better academic results.

Fidgeting is a natural strategy the brain relies on to insure the physical and mental survival during periods of sustained concentration and immobility. By allowing small movements during class, teachers and ergonomic furniture can increase a student's ability to concentrate and develop normally.

Top Tips

- Good quality tables and chairs, on castors with brakes, increases the flexibility of the room, enables rapid reconfiguration of spaces and reduces noise.

- Always select chairs for students that are specifically designed to help them naturally to twist, rock back and forth, and swivel.

- Try shadowing a student to check out what they are sitting on in a day. If they have a day of art, science and then technology in one day they may have no back support for several hours in one day. This is not desirable.

- It is always worth asking students to test and trial a range of chairs in a classroom situation over a couple of weeks so they can compare and contribute to wise procurement decisions.

4. Encourage Movement

Seating

Chairs and stools are potentially the most important piece of furniture in classrooms, students are expected to sit on them for many hours a day. Yet they are pieces of furniture that many schools try and save money on and look for the cheapest options, rather than considering which would best suit the needs of the student.

For decades students have sat on uncomfortable chairs, often the wrong height, and told to sit still for hours a day. Inevitably, this has a negative impact on their concentration. Those that try and move by rocking back on two legs get told off for dangerous behavior.

Young developing bodies need to move, they need to fidget, flex and twist.

Many companies sell chairs that claim to be ergonomic, but many, whilst supporting the back, do not allow other movement.

All seats should be selected that are specifically designed to help them to naturally twist, rock back and forth and swivel.

Tables

Some classrooms are so full of furniture, including large, heavy tables, chairs and cupboards, students cannot easily move around or be able to reconfigure the room.

The selection of all classroom furniture, especially tables or desks, must be be focused on supporting the wide range of learning activities being undertaken and also be easily reconfigurable to support whole class, independent, small or large group, or quiet working.

Questions:

- How may tables be used - how flexible are they?

- Can they accommodate laptops and books plus appropriate equipment?

- Do they need to stack? Is a flip top solution better so no lifting is involved?

- Should furniture have castors on them?

- Should you include some standing desks?

- Should tables have write on surfaces?

- Have students been asked to pilot new furniture and equipment?

Wheels - or not?

As schools refurbish and remodel learning spaces, a question often arises whether student chairs and tables should have wheels or not, especially in secondary schools.

There are a variety of different views on this. Some teachers have visions of students hurtling around classrooms, spinning round or interfering with other students.

If a learning environment is designed to be an easily reconfigurable space, then there is an expectation that students are able to move around the room.

Students may need to also access a desktop computer briefly in another part of the room. With a chair on castors they can simply slide across to it and then move back to their group.

Some classrooms provide additional chairs so students just walk to another part of the rom. All this does is clutter the room thereby reducing flexibility.

For / Against Wheels

- Students being able to move easily around the room improves collaborative working and creates a mobile and fluid learning environment. Students' working practice becomes more efficient.

- Not having wheels means that if students move around the room they tend to drag chairs around, increasing noise or have to lift chairs, increasing the chance of knocking into other students.

5. Spaces for All
Think Special Educational Needs

Flexibility and the choice of seating is also important for students with a variety of Special Education Needs. There are many reports from teachers that providing students with ADHD with furniture that is designed to allow their bodies to 'fidget' are more settled and encourages them to be much more focused on their work.

Equally by not confining them to one location / chair / desk for a whole lesson but providing freedom for them to move makes them more settled.

Think Additional Support

For many autistic students, acoustics can be problematic. For example, the seemingly normal hum of fluorescent lights can be unbearably loud, distracting or even painful.

Many ASD students are hyper-sensitive to the feel of physical objects, and physical input. Texture is important and this can be both good and bad as one child might be attracted to shiny, slippery surfaces, while another might find a slightly abrasive surface unbearable to touch.

Favoring natural textiles and materials can help strike a happy medium such as cork, rubber, porcelain, and wooland create debate to come to a joint consensus as to what would work – how will that improve independence? Why is that needed?

In 2016, 170,329 pupils (24.9% of all pupils) had additional support needs (ASN). 162,252 (95%) spend at least some of their time in mainstream classes. Scottish Government, Dec 2016

"People with autism are bombarded with sensory stimuli. They perceive everything without filtration and selection."

Bogdashina, 2011

Considerations

- What is interesting for some is sensory overload for others.
- While a buzzing noise of activity is great for some learners is too much and even painful for others.
- How do we create spaces for all to feel relaxed and able to learn?

Top Tips

Schools should use 'inclusive design' principles, which will put the needs of students. Considered the following when designing spaces for ASN students:

- Low Stimulation and Calming.

- Acoustics.

- Consistency, Repetition and Spatial Sequencing.

- Transitions and Movement (allow space for movement).

- Clear Messages (e.g. sign for quiet area).

- Retreat Spaces and Personal Space.

- Safety.

- Materials and Texture.

- Lighting (no fluorescent lighting or white light).

6. Focal Points
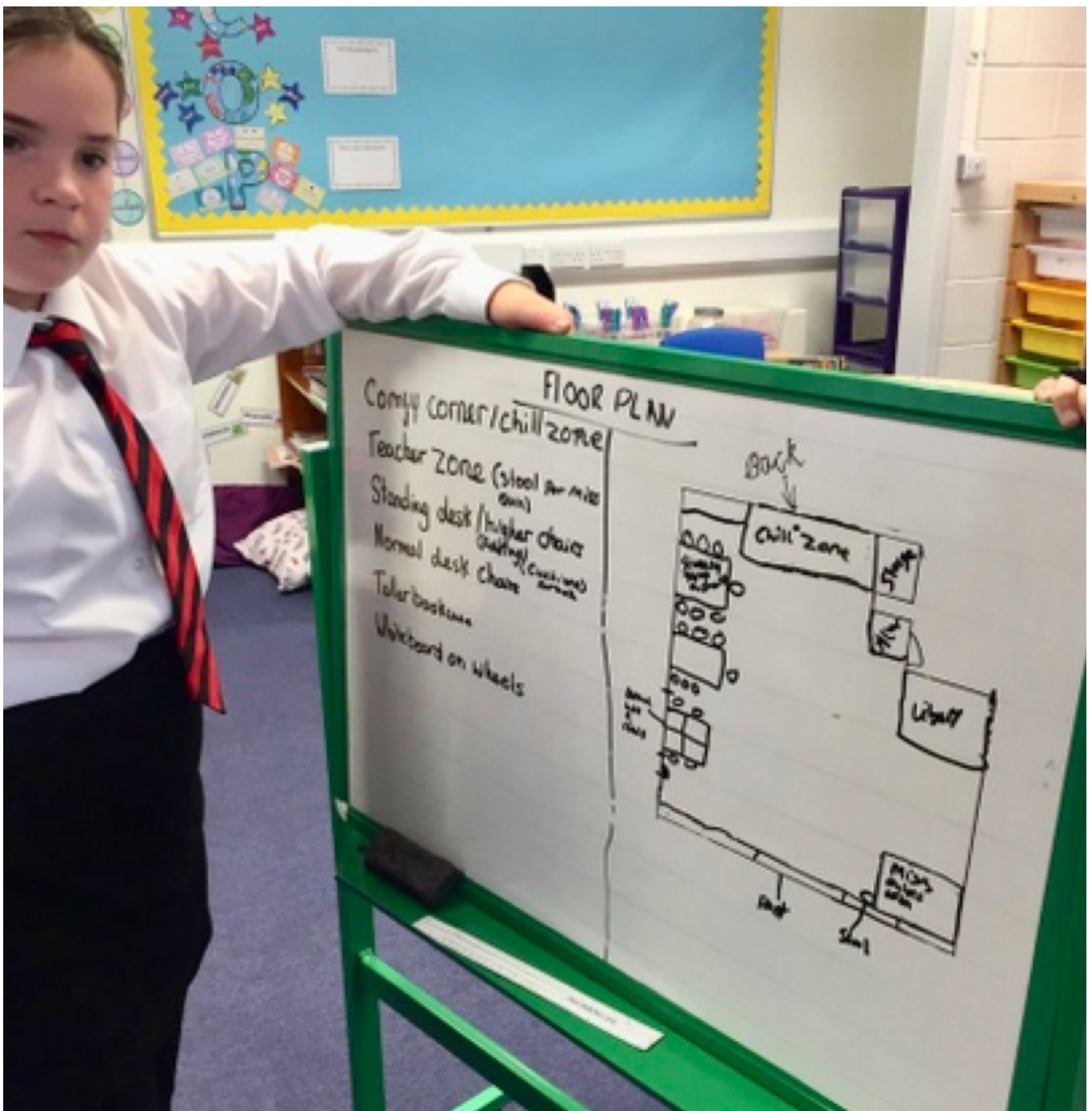
Several experts, including Professor Stephen Heppell, have long advocated for open flexible learning spaces and stressed the need to avoid all learning being focused at the 'front' of the room.

His 'Rule of Three' focuses on where spaces can be reconfigured or where there is a new build opportunity. However, whilst remodelling of spaces may not be possible for many staff, there are lessons to learn, especially regarding the positioning of focal points / learning walls on three locations around the room.

In many classrooms the only presentation point is still at the front of the room which is a wasted opportunity and limits approaches to learning.

By decluttering the classroom it should be possible to have a number of focal points around the room, where students can write on sections of the wall, they can work collaboratively, brainstorm, and present.

Teachers wanting to work with a group of students can use the focal point nearest a group without disrupting the whole class. To really make this strategy work, there has to be sufficient flexible space in the room for groups of students to stand, work collaboratively and be able to present from where they are, whilst also being in a position where other students can view the work.

Professor Heppell's Rule of Three:

**One:** Try never to have more than three walls (if possible)
Two: Have no fewer than three points of focus around classrooms
Three: Always able to accommodate at least three teachers, three activities (for the larger spaces three full "classes" too)

Top Tips

- Is there space within the room for the 'rule of three', three activities, three groups?

- Do you have a focus area for these groups to work in – do they have spaces/boards to share work/write on?

- Develop a range of focal points, or write on wall sections, at least three, around the room.

- When planning curriculum and lessons consider the rule of three – plan to get the most out of your available spaces.

7. Plan for Technology
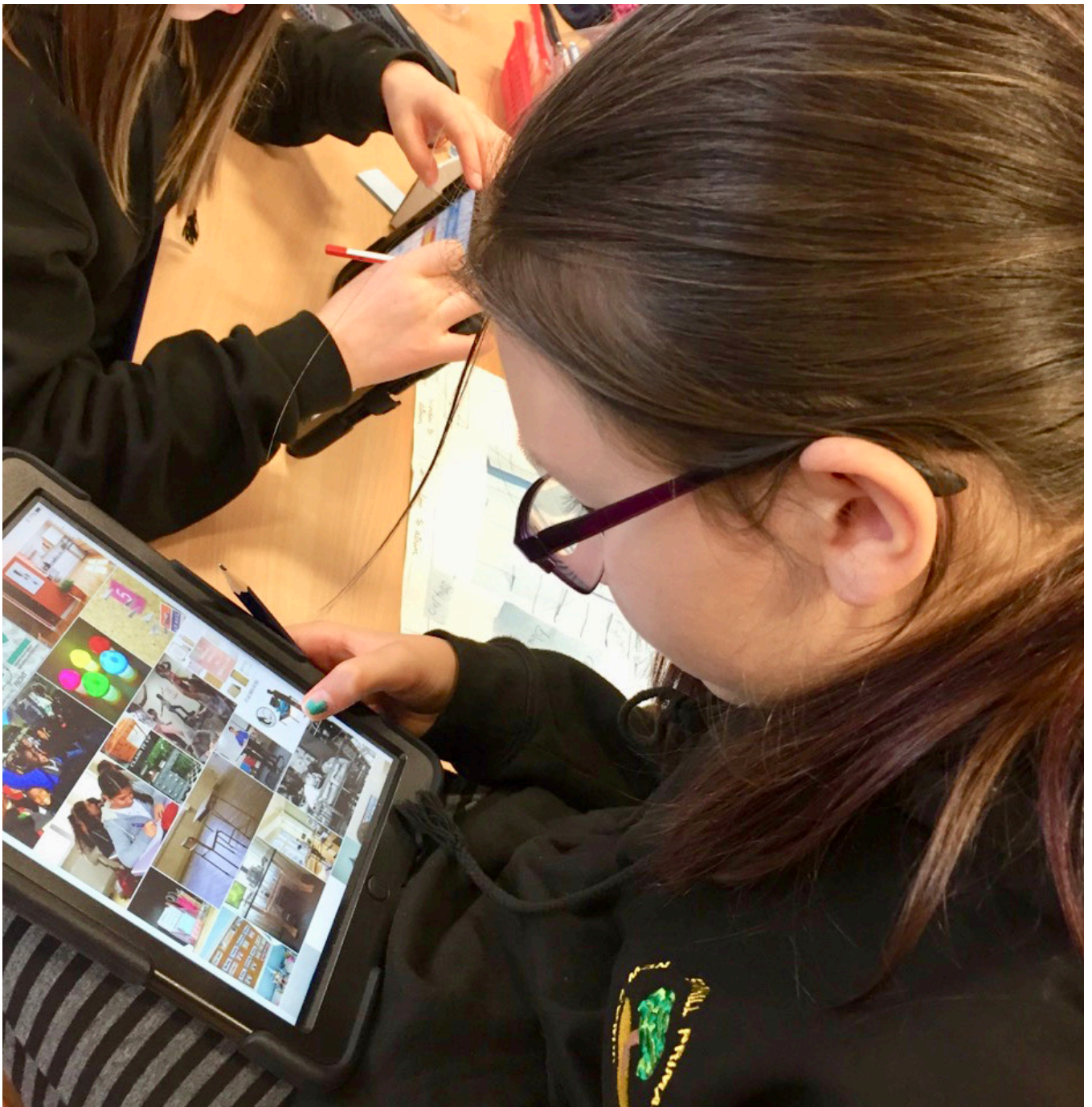
Using technology can add great value in supporting and enhancing learning and teaching

When using technology there are different scenarios we need to plan for. These include:

- individual study - perhaps on a desktop
- group work - where 2 or 3 students may be sharing a tablet device
- creative work and performances - where students may be setting up and recording animation.

All research shows that students learn best with technology when 2 or more are sharing - so that they can discuss and interact with the project and each other. Does your space allow for this easily for students to move and share devices for example?

When considering the use of technology to support learning in any space, consider:

- What training have staff and students had on the technology?

- How difficult is it to adopt this technology?

- e.g. a teacher using a visualiser well is easy, whole school learning platform adopted well is not so easy.

- Can we trial the technology before purchasing? Try before you buy.

- Can industry partners work with us to get the most out of the software/hardware we plan to use?
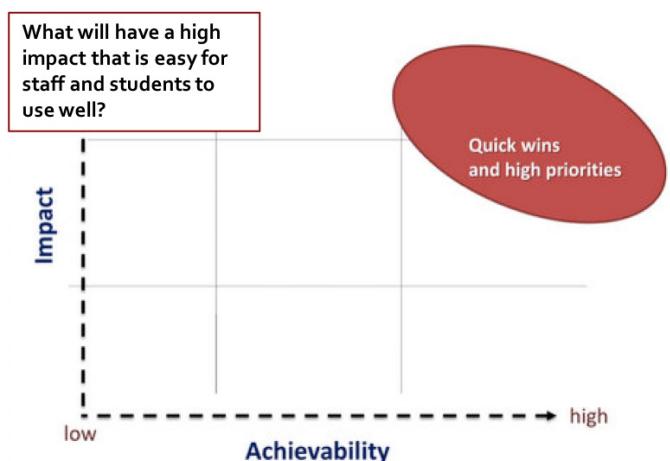
What value can new technologies bring to learning?

Research tells us that ICT has:

- The capacity to present or represent ideas dynamically or in multiple forms

- The facility for providing feedback to pupils as they were working

- The capacity to present information in easily changed forms

- Also research shows learning happens more with ICT when 2 students work together rather than individually.

Sharing and collaborating with ICT is vital.

- Can students all see the screen(s) easily? Is your presentation technology in the right place, is it movable, is it large?

- Can students gather around a desktop or is there only space for one learner? If mobile technology can tables be easily moved to allow groups of students to view and collaborate?

What will have a high impact that is easy for staff and students to use well?

Quick wins and high priorities

Impact

Achievability

low   high

7. Plan for Technology

Technology Spaces

1 → **Individual Study Spaces**

Student mobile devices (phones, laptops, tablets) IT suites

2 → **Group Collaborative Spaces**

Space for 2 or 3 students working around a computer

3 → **Creative Spaces**

Recording – Green Screen movies
Radio production
Robotics and Control
Planning – mind-mapping

4 → **Editing Space**

Video editing
Radio editing
Desktop editing
Space for reviewing work

5 → **Performance and Audience Spaces**

Screens and sound
Presenter spaces
Audience space
Recording space

Today's students live in a world that is extremely fast-paced, constantly changing, increasingly culturally diverse, technologically driven, and media-saturated. All this requires a fresh set of responses from education.

Top Tips

- Visit other schools that have successfully implemented technology – what was the impact on outcomes?

- Trial hardware and software before any major purchase. Try before you buy.

- Ensure all spend on new devices or software includes training and professional development for staff and students.

- Build capacity to drive change at all levels

- Develop 'Staff and Student Digital Champions Programme'.

- Work with industry partners on innovation projects – allowing them to bring their technical expertise, experience and networks.

8. Leadership and Professional Development
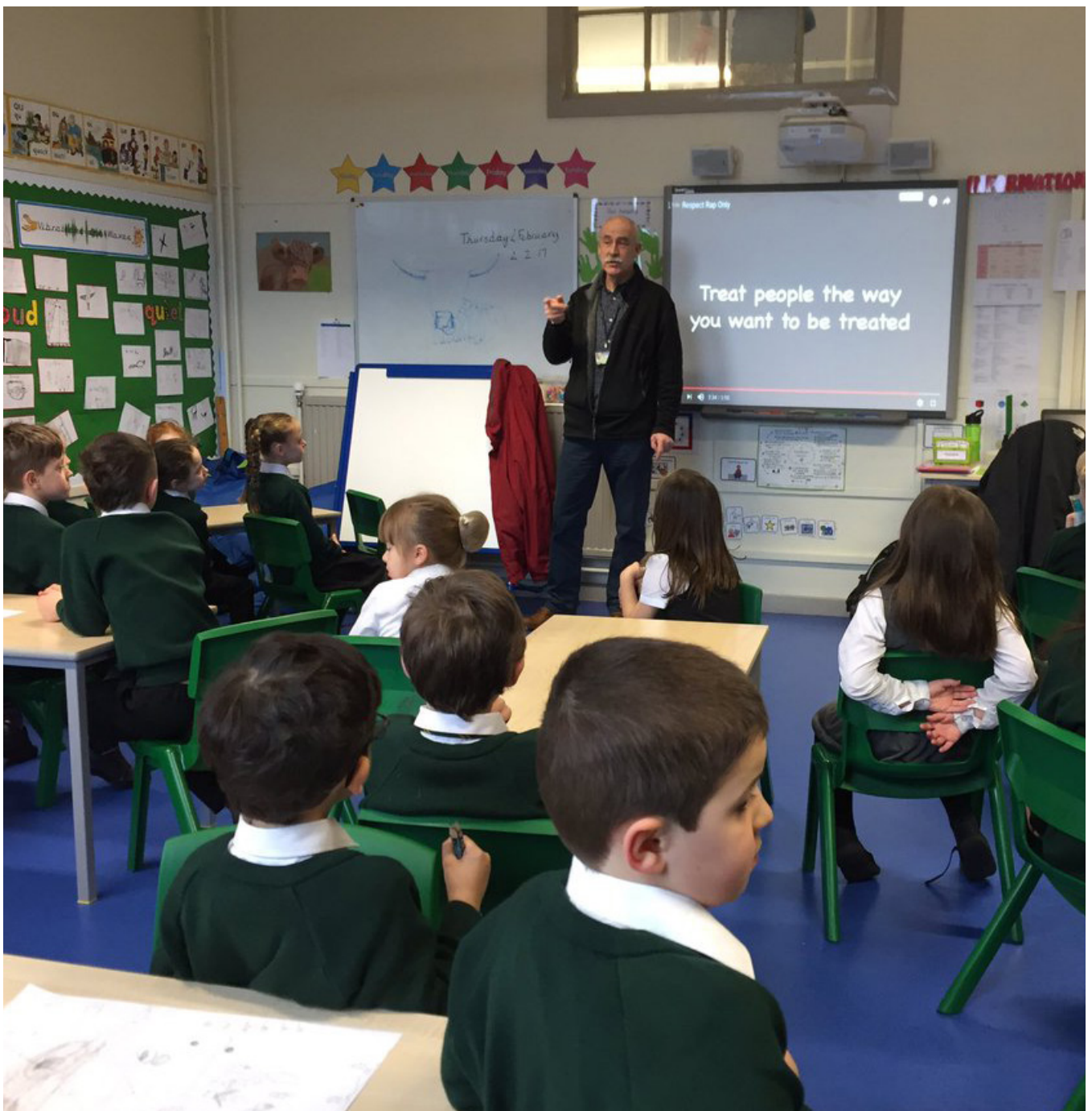
Well supported gradual change is more likely to be successful, creating a positive environment that new staff and students can adapt to equally well.

Those who have confidently taken on this work and made significant and positive changes, are those that have been supported well by their school management, colleagues and parents.

Changing practice takes time, time for planning, time for professional development, time for reflection and review.

Teachers supported by senior colleagues in areas such as curriculum planning in the new space, evaluating impact, the adoption of new technologies will find it easier to succeed and develop their practice. All adding to the value of the project.

Without the support of leadership, changes will remain in one classroom and will not be sustainable. How can changing practice in one class be scaled up?

Top Tips

- Processes – consider current and future learning activities – how far is the change from current practice?

- People – involve staff and students in any proposed changes and support them during the transition and beyond – plan activities and communicate well to ensure staff and students own the space!

- Places – design facilities to reinforce the school's proposed learning model but that are also flexible enough to respond to future change.

9. Test and Trial

What are you testing and trialing as part of the learning spaces project - what types of furniture will work best in your spaces and for the planned teaching and learning activities? What types of technology hardware or software would be helpful?

Within a classroom or whole school project, there will be a need to test and trial equipment, furniture, ICT, ways of working, different approaches to teaching and learning etc.

Many suppliers will loan equipment or ICT so that you can evaluate whether the product is right for you.

Give ownership of 'testing' to named individuals so they can report back, again reinforcing ownership of the product/approach.

Top Tips

- Before you purchase – ask suppliers if you can test products.

- Plan to evaluate what you intend to use it for? Is it fit for purpose?

- Set a period over which the testing will take place.

- Don't be worried if something doesn't work or doesn't improve things – that is the idea of testing.

- Learn from mistakes as well as successes. Why didn't it work?

- Be reflective on small changes – they may have a large impact.

10. How to Choose?
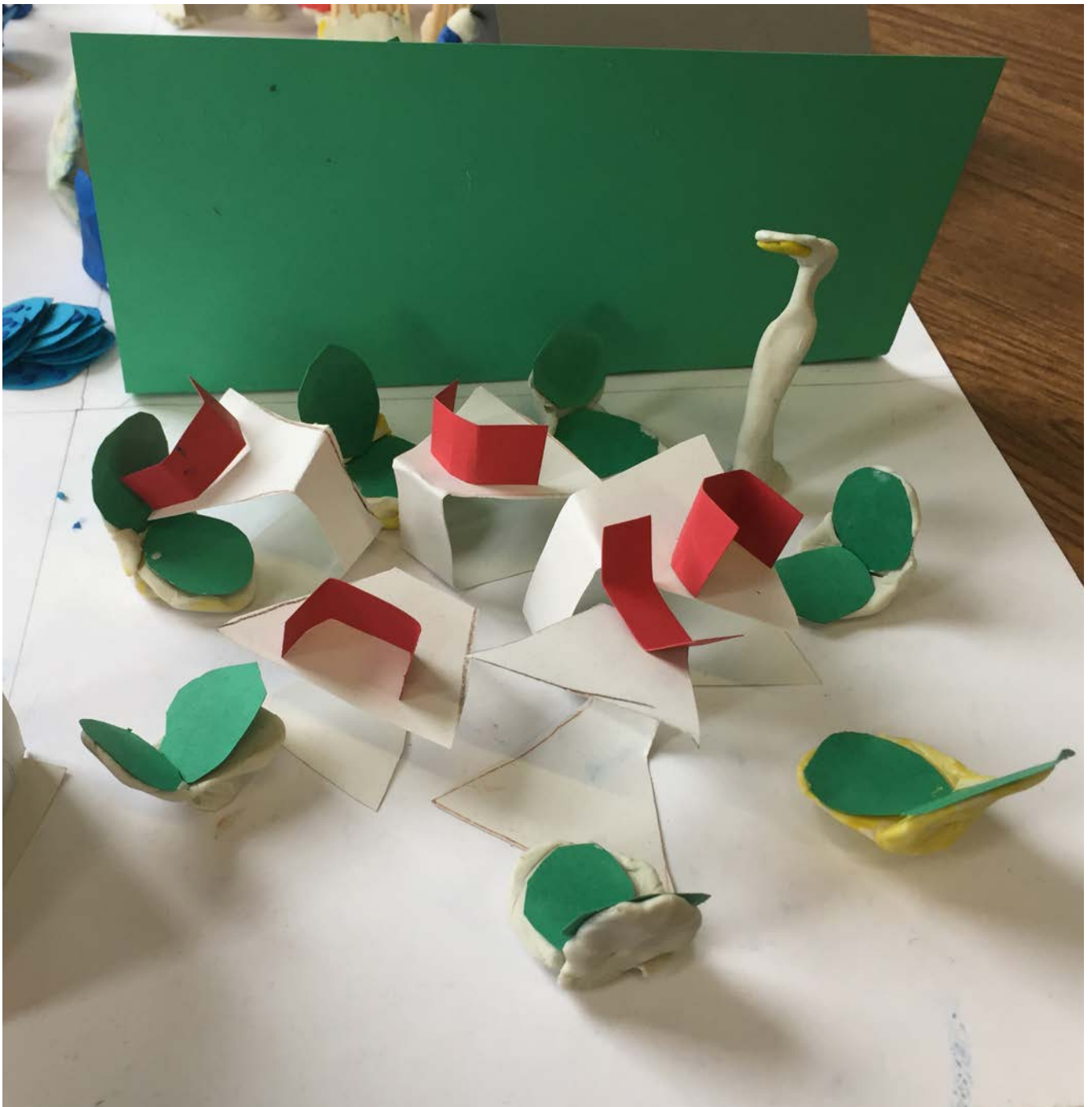
Every piece of furniture and equipment in a classroom or learning space should be selected for how it contributes to supporting the learning processes planned for that space.

Selecting the right furniture that is specifically designed to support young people's developing bodies and also agile learning strategies should be the priority.

Schools should consult with students and staff about how they like to learn or teach and how that may affect learning strategies. This will inform how students and staff would like to see rooms working and what would be the best furniture selection to facilitate it.

Create a Pilot Room

Many schools select one room to pilot and evaluate a range of new furniture and teaching strategies before making a major investment.

When deciding this approach, carefully considered decisions are required?

- Who will 'lead on the project?'
- Where will it be located in the school to provide convenient access?
- How are staff supported to ensure 'buy in', confidence and enthusiasm?

Creating a pilot room allows schools to assess how effectively new teaching methods work and the contribution different furniture choices make to an agile learning environment.

It also provides a perfect opportunity to support staff professional development in trying new approaches and strategies; ('Visible Learning').

There are two approaches:

- Have one member of staff working consistently in the room to really explore the opportunities
- Arrange a timetable so several staff and students work in the room to to see how it could support different ideas for maximum feedback.

It is important that a variety of teaching strategies are trialled to understand the capabilities and opportunities

Equally important is that students are involved and consulted throughout the process.

10. How to Choose?

There is a lot of choice when selecting school furniture and equipment

- How do schools decide which is the most appropriate for them and their learners?
- What equipment may be needed now and in the future?
- What technology provision is required - now and for future learning?
- What infrastructure may be needed to really support innovation and agile learning?

Top Tips

- Research on the internet.

- Visit education shows.

- Visit other venues, especially new schools.

- Consult with other practitioners.

- Invite suppliers to do a 'beauty parade' of equipment.

- Always request samples that can be tried out in school by the students, whatever their age.

- Talk to teachers via direct approach or through online forums.

11. Evaluate Impact of Spaces and Plan for Next Stages

The room has become 'ours' instead of 'mine', and this has given our students a sense of ownership and enhanced their engagement with learning. I will never go back to a traditional class layout.

How do we know if the changes have made an impact?

Your original vision and brief will have set out what you wanted to achieve, and this is an important starting point. Think about:

Timing

- When would be a good time to evaluate?
- When will the change start to become apparent?
- Do you need a term, or an academic year, or longer?
- Can you do some interim evaluation along the way?

What you are evaluating?

Are you going to reflect on how successful the process was, as well as whether the project outcomes are delivering what you wanted?

How you will measure success?

Will you measure using qualitative indicators (user satisfaction, focus groups, workshops etc.) or quantitative measures (energy usage, exam results etc.)?

How you will use the findings?

How will you capture and share the findings? Using your school website or newsletter, sharing at conferences, events and on social media, and getting students to blog or make videos are all great ways to continue the conversation and allow others to learn from your experience.

How will the findings feed into future development of the learning environment at your school? What best practice can you adopt more widely?

Top Tips

- Decide the evaluation timetable e.g. group meets once a term for one year.

- Who is leading the evaluation?

- Who is in the evaluation group?

- What are you evaluating? Be clear.

- How will you share ongoing work with this group?

- Will you share interim findings – how? Report to leadership updating through newsletters and Facebook etc.

- Learn from mistakes as well as successes. Why didn't it work?
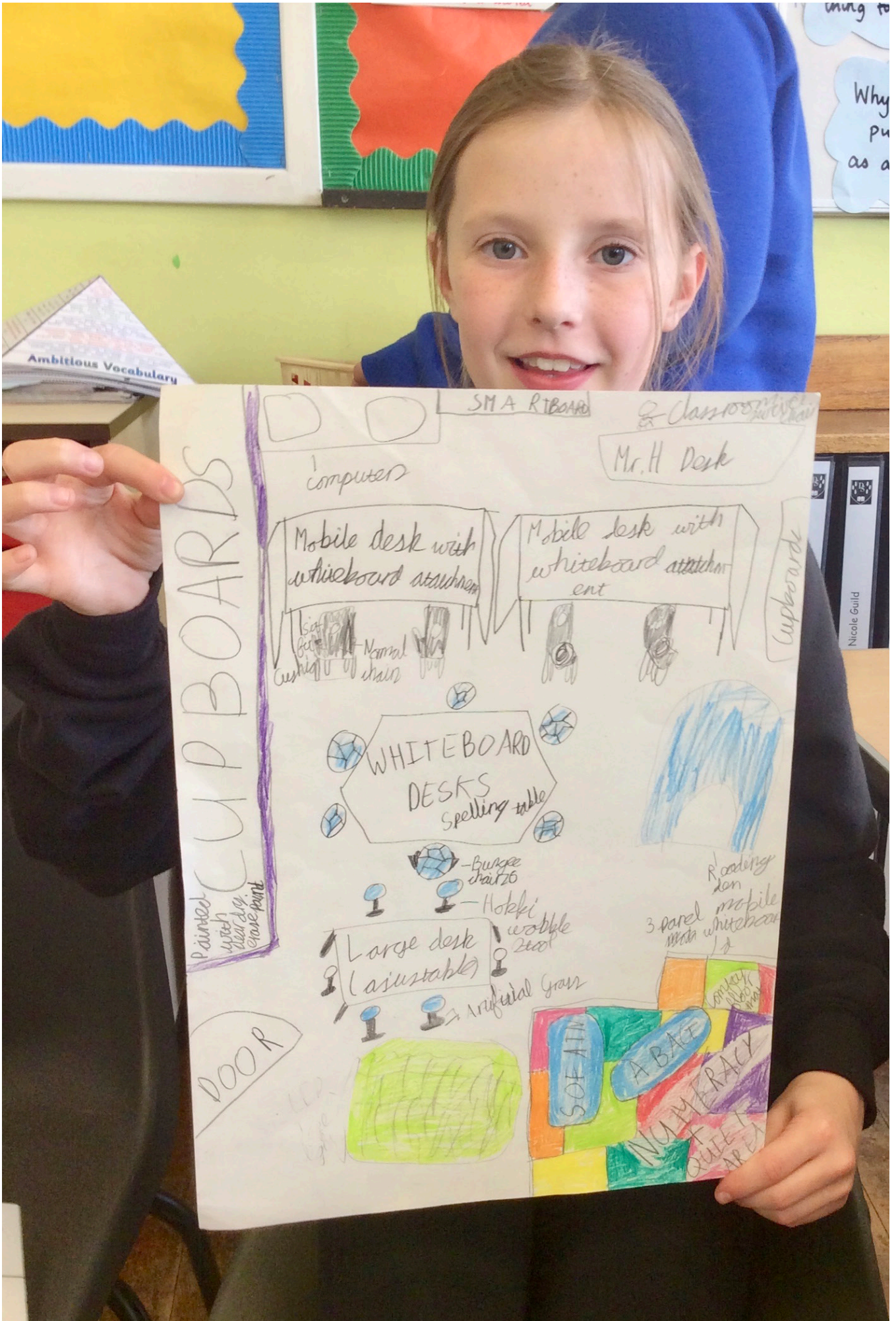
12. And Begin again...

Improving spaces is a continuous process.

ICT may change and develop, the use of the spaces may change or the needs of the students vary, the curriculum area taught in any space may develop or change completely.
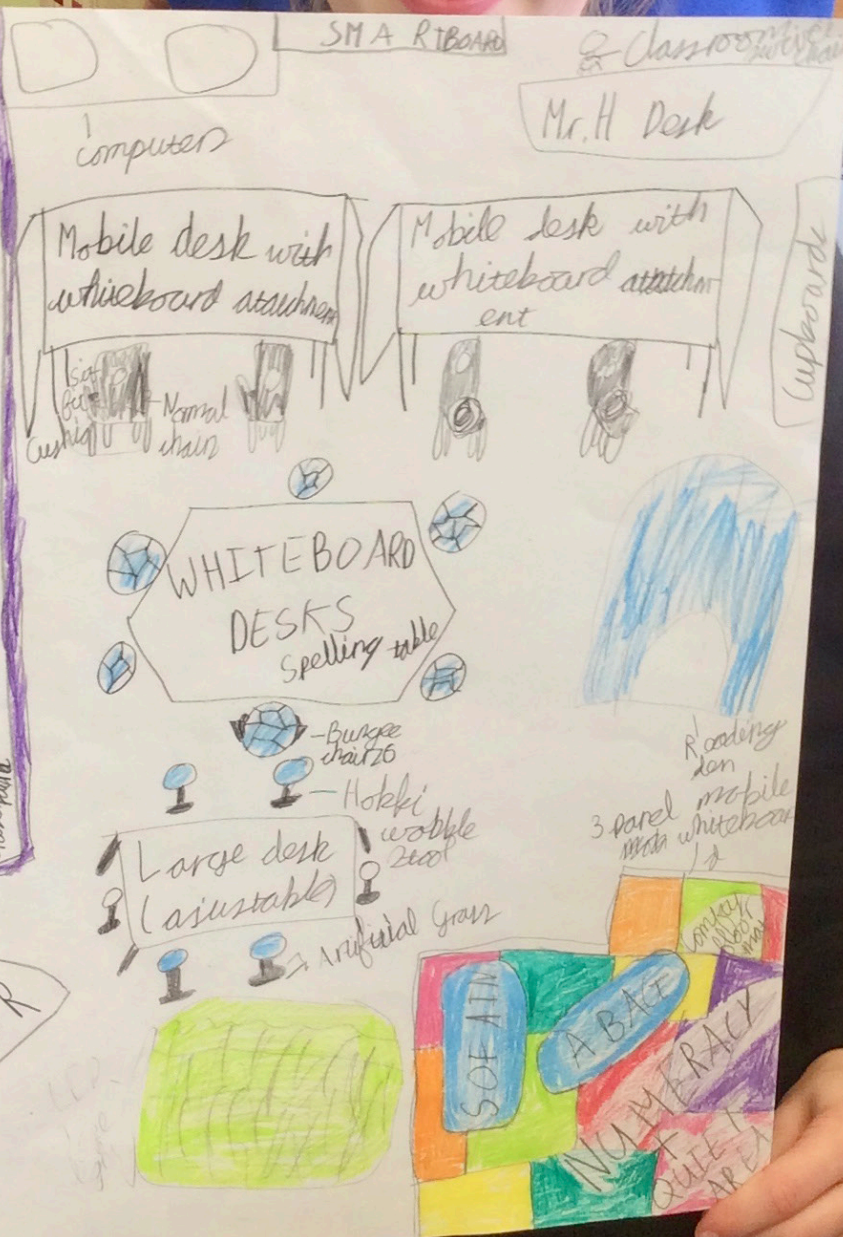
Also as teachers and students occupy the spaces they will begin to understand what works for them and things they would like to change or improve.

Encouraging staff and students to learn with their environment and trial new approaches will always help produce a positive learning environment for all in schools. Young developing bodies need to move, they need to fidget, flex and twist.

CUPBOARDS

SMARTBOARD

Classroom

Mr.H Desk

Computers

Mobile desk with whiteboard attachment

Mobile desk with whiteboard attachment

Normal chairs

Cupboards

WHITEBOARD DESKS
Spelling table

Bungee chair 26

Hokki wobble stool

Large desk (adjustable)

Artificial Grass

Reading den

3 panel mobile mini whiteboards

Painted with then dry erase paint

DOOR

SOFA

BAG

NUMERACY QUIET AREA

Ambitious Vocabulary
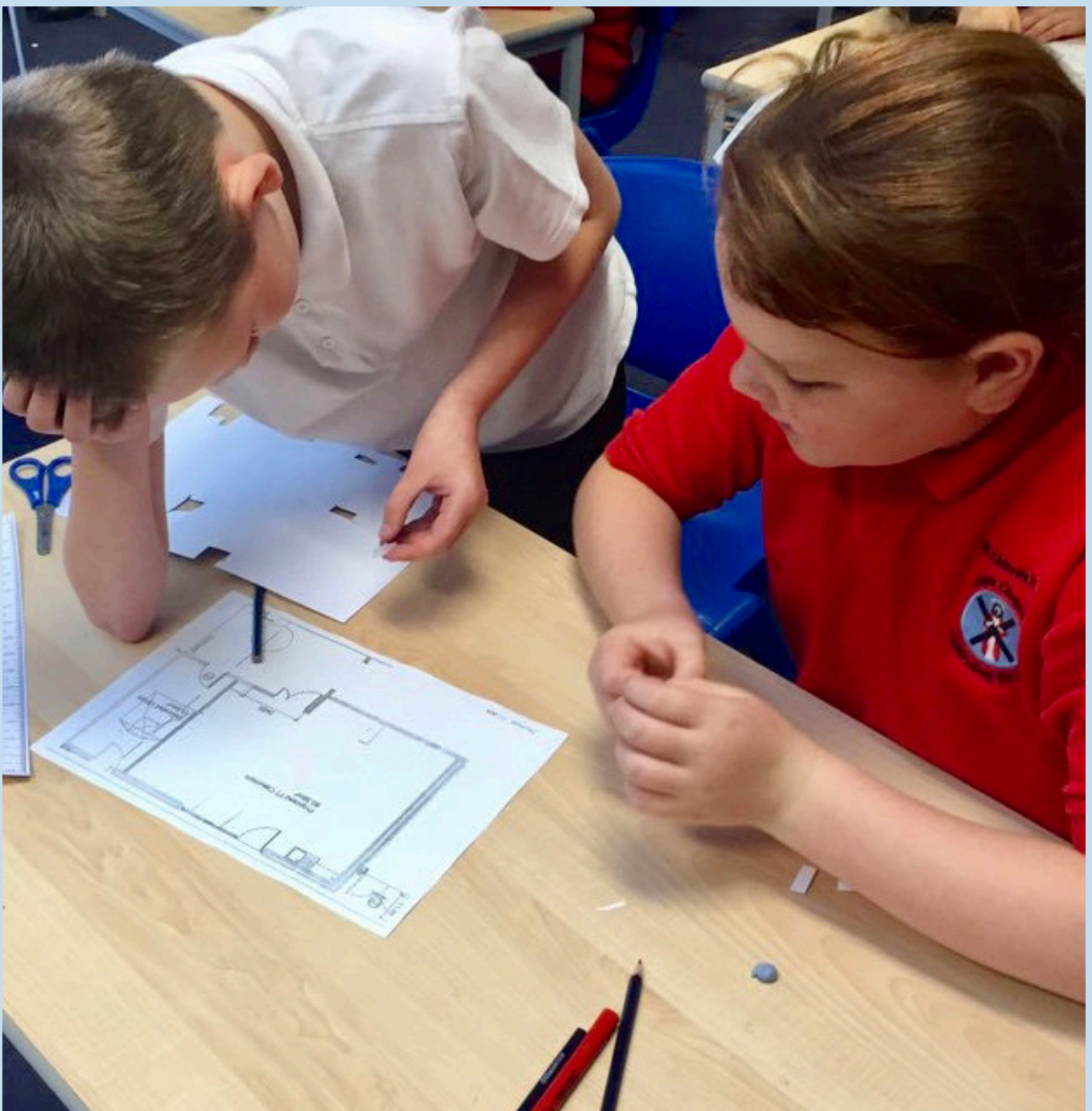
Nicole Guild

All case studies outlined here are
part of the Mi:SPACE Projects

CASE STUDY_01

St Andrew's Primary School

Pupils planned a comprehensive approach to this project. They:

- Read a range of research papers and evidence about the impact of learning spaces.

- Considered what types of learner they were, how they performed best and what part the physical environment made.

- Fed back responses to the class for further discussion.

- Experimented with layouts and gathered feedback, whilst also tracking budget implications.

- Trialled different approaches to learning (Maths done on the floor did not work!)

- Used research to identify need for taller desks, high stools and standing desks.

- Experimented with write-on walls and furniture by covering existing furniture and walls with paper.

- Did not focus on mobile furniture, rather using furniture and learning zones that encouraged movement.

- Found ways to make changes to the classroom in terms of teaching and learning and accessing resources and technology.

- Created the design they had imagined, with height adjustable furniture, and comfy reading area and lots of writable surfaces and mobile whiteboard partitions.

- Evaluated impact on learning.

- Did not like the delay between selecting new FF&E and delivery times.

Loanhead Primary School

Students were ambitious and started the project with research, shared thoughts, discussions, surveys and votes. The class:

- Contacted other schools, business and other experts to help decision making.

- Visited inspiring buildings around Edinburgh and interviewed staff that worked in them.

- Visited IKEA, interviewed the manager and tried ergonomic and innovative furniture.

- Kept a scrapbook, models, diagrams, working drawings and ideas.

- Conducted tests in their own space, moving all furniture, including teachers desk, sitting on the floor and working in a shoe free zone – this made a significant impact on students.

- Worked collaboratively and digitally in 3D with drawings to show ideas and discuss perceived impact their changes would make and why (including using video calls to other students).

- Found examples of lighting, seating, classroom tools, technology and teaching and learning practises that they wanted to explore.

- Considered outdoor learning, the use of ambient sounds and completely changing the use of colour in their space.

- Wanted to create spaces that offered adaptability, comfort and encouraged more activity and with adjustable height desks, mobile chairs and options for writable or digital surfaces.

- Changed teaching approaches.

- Introduced movement and activity into everyday routines, to increase energy and concentration.

- Ordered a variety of carefully chosen equipment and furniture.

- Created a mural on one wall of a rainforest scene as a calming influence, using colours to create a positive working environment and an element of nature into the room.

CASE STUDY_03

Danderhall Primary School

By the time of the final set up, the class was already working in new ways.

Danderhall Primary School

Pupils started this project through undertaking research into Learning, Teaching and Psychology. They also:

- Understood different types of spaces and how they used them.

- Used student voice to develop ideas around independent learning.

- Experimented and tested different set ups and scenarios within their existing spaces.

- All changes were considered and tested before any physical aspects of the classroom were changed.

Before ordering new furniture, pupils introduced a range of features including:

- Independent learning spaces, mobile teachers desk and independent learning timetables for each student.

- Explored different range of working scenarios, individual, group, quiet and supported learning. FFE choices were made to reflect these.

- Used a variety of writeable surfaces with write on desks, white board paper on walls and a range of other writeable surfaces.

Pupils also:

- Made efforts to understand and reflect on all the decisions that were made and how they impacted on the class.

- Used new classroom furniture to change / refine learning experiences.

- Changed flooring and lighting, including introducing lamps.

- Kept good records of the process and reflected on the experience and decisions.

Further Reading

Publication	Author
The Suitability Core Fact Building better schools: Investing in Scotland's future	Scottish Government
Optimal learning spaces: design implications for primary schools	Barrett, PS and Zhang, Y (University of Salford)
Clever Classrooms	Barrett, PS et al. 2015 (University of Salford)
The Impact of School Infrastructure on Learning	Barrett, Treves, Shmis, Ambasz & Ustinova', 2019, World Bank Group
Inspiring Learning Spaces	Scottish Government, Scottish Futures Trust, Architecture & Design Scotland
Inspiring Learning Spaces Toolkit	Scottish Futures Trust, supported by Architecture & Design Scotland and The Learning Crowd
Settings for Learning: Identifying New Approaches	Architecture & Design Scotland
Remade Learning Places: Why Refurbish?	Architecture & Design Scotland