

PKC Cymru Curriculum Handbook

Contents

1. An Introduction to the Primary Knowledge Curriculum 3
2. How is PKC Cymru taught? 6
3. Cynefin 7
4. Lesson Structure 9
5. Learning Behaviours 10
6. Independent Learning 16
7. Authentic Learning 19
8. Outdoor Learning 30
9. Digital Competence Framework (DCF) 33
10. Curriculum Leadership 36
11. Measuring Curriculum Impact 41
12. Learner Voice 49
13. Inclusion 52
14. Assessment 59
15. Recommended Reading 60
16. Curriculum Terminology 62

1. An Introduction to the Primary Knowledge Curriculum

The Primary Knowledge Curriculum (PKC) Cymru is a partnership approach to curriculum design, developed collaboratively with schools across Pembrokeshire and Carmarthenshire to support high-quality, knowledge-rich teaching and learning. Rather than being a resource bank of ready-made lessons, PKC provides a coherent curriculum framework that helps schools plan and deliver lessons with confidence while retaining professional autonomy. Schools using PKC Cymru have access to a collection of curriculum materials, including long-term curriculum maps, unit rationales, detailed lesson plans, knowledge organisers and supporting teacher resources. These materials are designed to ensure that knowledge and skills are carefully sequenced and build progressively over time, while allowing teachers to adapt them where appropriate to meet the needs of their learners and their local context.

PKC and the Curriculum for Wales

PKC Cymru's curriculum has been designed and sequenced in alignment with the Curriculum for Wales, with the Four Purposes and Statements of What Matters at the heart of curriculum design. Through its curriculum content, pedagogical approaches and assessment practices, it supports learners to make meaningful progress towards the Four Purposes whilst ensuring full coverage of the mandatory elements and the aspirations of each Area of Learning and Experience.

The curriculum is planned around the knowledge, concepts, skills and experiences that learners need to develop over time. Progression is supported through the careful sequencing and revisiting of learning, enabling pupils to deepen their understanding, make connections between ideas and apply their learning in increasingly sophisticated ways.

Whilst learning is organised through the Areas of Learning and Experience, equal importance is given to the distinctive disciplines that sit within them. In Humanities, for example, learners develop an understanding of the concepts, knowledge and methods of enquiry that underpin history, geography and religion, values and ethics. This ensures that learners not only acquire substantive knowledge but also understand how knowledge is generated, interpreted and applied within different disciplines.

The curriculum has been designed to ensure that the Statements of What Matters are realised through rich disciplinary learning. As learners progress, they develop secure knowledge and understanding whilst becoming increasingly able to think critically, analyse evidence, consider different perspectives and apply their learning to local, Welsh and global contexts.

By combining carefully sequenced curriculum content with the principles and aspirations of the Curriculum for Wales, PKC Cymru provides an ambitious, coherent and inclusive curriculum. It develops disciplinary understanding, supports progression across the Areas of

Learning and Experience and prepares learners to become ethical, informed and ambitious participants in Wales and the wider world.

What is a knowledge-rich curriculum?

A knowledge-rich curriculum exposes children to ambitious content that has been highly specified and well-sequenced, leaving nothing to chance. Within schools, time is limited, and a knowledge-rich curriculum ensures that each moment will support children in acquiring the knowledge and skills that they will need to become well-educated citizens of the future. Every historical figure encountered, philosophical idea grappled with, and scientific concept applied, fits neatly into a scheme of learning that holds a sense of purpose and develops logically from lesson to lesson, unit to unit and year to year. Utilising cognitive science, the psychology of learning, memory and schemata, a knowledge-rich curriculum is designed to ensure that the knowledge is taught to be remembered. At its core, a knowledge-rich curriculum democratises knowledge – it enables all children, regardless of socio-economic background, to be provided with the knowledge to succeed in later life.

The three principles of a knowledge-rich curriculum that underpin PKC Cymru:

- Knowledge is **valued** and **specified**
- Knowledge is **well-sequenced**
- Knowledge is **taught to be remembered**

2. How is PKC Cymru taught?

PKC Cymru's curriculum is designed in alignment with the Curriculum for Wales and is organised through the Areas of Learning and Experience. Whilst the Areas provide the framework through which learning is planned and connected, we also place significant importance on learners developing an understanding and appreciation of the distinct disciplines that sit within each Area. We believe that pupils should not only learn Humanities, Science or Expressive Arts, but also come to understand what it means to think, enquire and work as historians, geographers, scientists, artists and other disciplinary specialists.

Each discipline has its own body of knowledge, concepts, vocabulary, methods of enquiry and standards of evidence. For example, historians investigate change, continuity and significance through the evaluation of sources and interpretations, whilst geographers explore the relationship between people, places and environments through fieldwork, data analysis and spatial thinking. By explicitly teaching these disciplinary approaches, learners develop a deeper understanding of how knowledge is created, tested and applied in different fields of study. This helps make learning more authentic and enables learners to recognise how these disciplines exist beyond the classroom in public debate, decision-making, community life and employment.

PKC Cymru provides carefully sequenced knowledge, concepts and skills for each unit of learning, ensuring coherent progression across the curriculum. However, it does not prescribe how schools should organise the delivery of this learning. Schools may choose to teach units through broader thematic studies, whilst others may teach units as distinct topics or subjects. This flexibility allows schools to design learning that reflects the needs of their learners and communities whilst maintaining the integrity and progression of the curriculum.

Whilst meaningful connections are made both within and across Areas of Learning and Experience, these connections are purposeful rather than forced. Learners are encouraged to recognise links between disciplines and apply knowledge in different contexts, but this does not replace the explicit teaching of disciplinary knowledge and understanding. We want learners to understand not only the connections between history and geography, for example, but also what makes each discipline unique and valuable in its own right.

This approach supports the realisation of the Statements of What Matters whilst ensuring that learners develop secure disciplinary knowledge and understanding over time. Through carefully sequenced learning, pupils build a rich body of knowledge, learn how different disciplines investigate and explain the world, and develop the ability to apply their learning in increasingly complex and meaningful ways. In doing so, they are better prepared for lifelong learning, informed participation in society, and future study and careers.

3. Cynefin

Cynefin is a key principle within the Curriculum for Wales and broadly refers to a learner's sense of belonging, place, identity, heritage, culture, community and relationship with the local and wider world. It helps learners understand who they are, where they come from, and how they relate to Wales and beyond. Developing learners' understanding of their cynefin supports a strong sense of identity, belonging and well-being, while also fostering respect for and understanding of others.

Cynefin can be understood through three overlapping areas:

1. **Place** – understanding the local environment, landscape, history and community that shape learners' experiences
2. **Identity and Belonging** – developing an understanding of who we are, where we belong and the relationships and experiences that influence our lives.
3. **Wales as a Diverse Nation** – exploring Welsh culture, language and history, while recognising the contributions of the many communities and cultures that have shaped and continue to shape Wales.

Examples in PKC Cymru		
Place	**Identity and Belonging**	**Wales as a Diverse Nation**
• Y1 Stories of the Past – our local history	• Y1 Stories of the Past – family trees	• Y1 Stories of the Past – Welsh figures (Hywel Da, Glyndŵr)

• Y2 Spatial Sense – my school site, maps of the local area • Y3 Settlements – understanding local settlement patterns • Y4 Spatial Sense – our local area, changes to the local area over time • Y5 Our Local Area – entire unit (fieldwork, local issues) • Y6 Welsh Geographical Issues – local case study	• Y2 Powerful Voices – Betty Campbell, Michael Sheen • Y3 Law and Power in Wales – governance shaping lives • Y4 Victorian Wales – education, inequality • Y5 Industrial Revolution – workers' lives, rights, Welsh communities • Y5 Democracy in Wales – suffrage, representation • Y6 Modern Wales – national identity, cultural preservation, Welsh language • Y6 WWII – Home Front experience	• Y1 Leading Wales – Senedd, Welsh leadership • Y2 Romans in Wales – how Romans influenced Welsh settlements • Y2 Prehistoric Wales – how early people in Wales lived • Y3 Medieval Wales – examining Welsh kingdoms, castles • Y3 Law and Power in Wales – how Welsh law, English rule and key figures shaped Welsh governance • Y4 Tudor Wales – how Acts of Union influenced identity • Y4 Victorian Wales – spread of industry in Welsh valleys, migration to Patagonia • Y5 Industrial Revolution – coal mining communities, links to global trade • Y5 Democracy in Wales – Welsh suffrage movement, devolution • Y6 Welsh Geographical Issues – local environmental challenges • Y6 Modern Wales – language, identity, events (Aberfan, Capel Celyn)

PKC Cymru provides opportunities for learners to explore their local community, Welsh heritage and culture, and the diverse identities that make up modern Wales. Through authentic learning experiences, visits, visitors, community partnerships and meaningful contexts, learners will make connections between their own experiences and those of others. Learners will see themselves, their families and their communities reflected in their learning, helping to strengthen their sense of belonging and engagement.

Cynefin is not limited to the local area. It provides a foundation for learners to understand how their identities are connected to wider social, cultural and historical influences, enabling them to make meaningful connections with people, places and histories across Wales and the wider world. Through this work, learners will develop as informed, ethical and active

citizens who value diversity, appreciate different perspectives and understand their place in an interconnected world.

References:

- Humanities: Designing your curriculum - Hwb
- Cross-cutting themes for designing your curriculum - Hwb
- Overview - Cynefin - Resources - Hwb

4. Lesson Structure

PKC lessons follow a consistent structure underpinned by Rosenshine's Principles of Instruction (2012), providing a clear sequence that supports pupils in encoding and retaining knowledge. The lesson structure is designed to reduce cognitive load, make learning explicit, and provide regular opportunities for retrieval, guided practice and independent application.

1. **Prior Learning**

Each lesson begins by revisiting previously taught knowledge. This retrieval practice strengthens long-term memory and helps pupils to make connections between new and existing learning. For teachers, we can identify and address misconceptions before introducing new content.

2. **Vocabulary**

Key subject-specific vocabulary is introduced and explicitly taught before new learning begins. Ensuring pupils understand and can use precise academic language enables all learners to access the curriculum confidently.

3. **Teach**

New knowledge is presented through clear, carefully sequenced explicit teaching. Teachers explain concepts in manageable steps, using modelling, examples and questioning to check understanding throughout. This ensures pupils develop secure knowledge before moving on to independent application.

4. **Talk Task**

Pupils are given structured opportunities to discuss new learning with a partner. Purposeful talk tasks enable pupils to rehearse vocabulary and articulate their thinking.

5. **Task**

Pupils independently apply the knowledge they have been taught. Tasks are directly linked to the knowledge objective, allowing teachers to assess understanding while enabling pupils to consolidate new learning through successful practice.

6. **Step for Depth**

Pupils extend their thinking through additional challenge that requires them to apply their understanding in greater depth. Rather than introducing new content, these tasks encourage deeper reasoning and richer application of the knowledge already taught.

7. **Plenary**

The lesson concludes with a review of the key learning. This provides an opportunity to revisit the lesson's essential knowledge and check for understanding.

5. Learning Behaviours

Whilst there is no single prescribed approach to developing learning behaviours, experience across PKC partner schools highlights a number of practices that support successful curriculum enactment.

Learning behaviours are the observable actions and habits that enable pupils to engage successfully in learning. Developing these behaviours is important because successful learning involves not only acquiring knowledge but also developing the attitudes, dispositions and habits needed to apply that knowledge effectively over time. When learners demonstrate positive learning behaviours, they become increasingly active participants in their learning, able to engage thoughtfully with new ideas, challenges and opportunities.

Across PKC partner schools, these behaviours are developed through explicit teaching, modelling and regular practice. Learners are supported to understand how to listen attentively, participate in discussion, ask questions, respond to feedback, work collaboratively and persevere when faced with challenge. Rather than assuming that these behaviours will develop automatically, successful schools make them visible, teach them intentionally and reinforce them consistently through everyday classroom practice.

By establishing shared expectations and creating regular opportunities for learners to practise these behaviours, schools help pupils become increasingly confident, independent and successful learners. Such approaches support learners to access the curriculum more effectively and contribute to their progress towards the Four Purposes.

Oral Rehearsal

Oral rehearsal is when pupils practise saying sentences, new vocabulary or explanations aloud before they apply them independently (e.g. writing task). This could include verbally structuring an answer, repeating key sentences and rehearsing with a partner during a talk task.

Choral Response

Choral response is when the whole class responds together to a teacher prompt or question. It is a collective response used to reinforce and check understanding. This could involve repeating a new word, recalling a key fact or practising a sentence stem. Although it is like oral rehearsal, they differ – oral rehearsal is about shaping individual thinking before pupils complete a task independently; choral response is about collective practice and retrieval.

Talk Partners

Talk partners provide structured opportunities for pupils to explain their reasoning and learn from one another. Partner talk should not be viewed as simply 'having a chat'; it is a deliberate learning strategy that helps pupils process information and develop precise explanations.

For talk partner tasks to be effective, pupils need to be taught the behaviours of productive discussion:

- **Eye contact and active listening**: where possible, pupils should face their partner, make eye contact, listen carefully and show that they are engaged with what is being said.
- **Taking turns**: pupils should learn to wait and build upon their partner's contribution rather than speaking over or interrupting them.
- **Using complete sentences**: pupils should practise expressing ideas clearly rather than offering single-word answers.

Teachers must model these behaviours explicitly and provide sentence stems where appropriate. High-quality discussion should involve pupils improving and refining their thinking rather than simply exchanging answers.

Habits for Discussion

Discussion is most effective when pupils understand the behaviours expected during collaborative thinking. Teachers should explicitly teach and revisit habits such as:

- Listening to understand rather than simply waiting to speak
- Responding directly to another person's idea
- Explaining reasoning using evidence or examples
- Asking questions that deepen understanding
- Challenging ideas respectfully

Pupils should learn that discussion is not about finding the quickest answer but about developing stronger understanding through shared thinking.

‘No opt out’

‘**No opt out**’ is a questioning approach where pupils are supported to eventually provide an answer, even if they are initially unsure. Rather than accepting ‘I don’t know’ as the end point, teachers guide pupils towards success through scaffolding, such as:

- Repeating the question with additional support
- Providing a sentence stem
- Asking another pupil to contribute and returning to the original pupil to repeat their answer
- Allowing oral rehearsal before an individual response

This ensures that every pupil experiences success and develops the expectation that they can contribute to classroom thinking.

‘**Say it again, better**’

‘**Say it again, better**’ encourages pupils to improve the precision and quality of their responses. Teachers can prompt pupils to refine their vocabulary or explanations rather than accepting the first answer given. For example, it may be used to encourage the use of full sentences when answers are brief:

Teacher: “Why was Hadrian’s Wall built?”
Pupil: “To stop people.”
Teacher: “Say it again, better.”
Pupil: “Hadrian’s Wall was built to defend the northern boundary of the Roman Empire from attacking tribes.”

This develops academic language and helps pupils understand that strong answers are often constructed through refinement.

‘Build on’

‘Build on’ requires pupils to develop the habit of extending and improving upon the answers of their peers. It encourages pupils to listen carefully and add further detail or examples. Pupils should develop the habit of responding to others’ thinking using phrases such as:

- I would like to build on ___’s idea by adding…
- A further example of this is…
- I agree with ___ because…
- I would like to add…
- I partly agree because…
- I disagree because...

Teaching these sentence structures explicitly helps pupils develop the language needed for academic discussion. Over time, pupils become more confident in explaining their thinking and using discussion to deepen their learning.

A pupil may indicate to the teacher that they would like to 'build on' using two closed fists and moving them one above the other. This will signal to the teacher that a pupil would like to extend the classroom discussion.

Routines for Gaining Attention

Effective learning depends on pupils being able to quickly transition between different tasks and focus their attention when required. Consistent attention routines reduce lost learning time and help pupils understand when they need to listen. Common examples include:

- Countdown routines (e.g. '5, 4, 3, 2, 1')
- Call-and-response routines (e.g. '1, 2, 3, eyes on me...1, 2, eyes on you')
- Agreed signals for silence and attention
- Clear expectations for stopping activities, putting equipment down and facing the speaker

Questioning and Checks for Understanding

Questioning is central to developing learning behaviours because it teaches pupils that thinking and responding are expected parts of every lesson. Teachers should use a balance of whole-class responses and individual questioning to assess understanding and promote participation.

Whole-class responses (such as choral response, partner talk and mini whiteboards) allow teachers to quickly check understanding and ensure all pupils are engaged.

Individual questioning allows teachers to explore pupils' thinking in greater depth, identify misconceptions and encourage pupils to articulate their reasoning.

Effective questioning should:

- Require pupils to think before answering, building in sufficient wait time for all pupils to formulate a response
- Include all pupils rather than relying on volunteers
- Encourage explanation, justification and application
- Reveal misconceptions early
- Provide opportunities for pupils to improve their responses

A strong culture of questioning, attention and discussion ensures that pupils are consistently thinking and communicating throughout lessons. Over time, these behaviours become embedded habits that enable pupils to learn more effectively and independently.

Mini Whiteboards

Mini whiteboards are a powerful tool for increasing participation and providing immediate feedback. They allow all pupils to respond simultaneously, giving teachers a clear picture of understanding before moving on.

Effective use of mini whiteboards includes:

- Asking questions that require every pupil to think and respond
- Asking questions that allow pupils to present a clear, readable answer that can be scanned quickly by the teacher (e.g. a year, a name, a few words)
- Giving pupils sufficient thinking time before revealing answers
- Checking responses carefully rather than simply looking for correct answers
- Addressing misconceptions immediately

To maximise their impact, teachers should develop a systematic approach to scanning responses. This ensures that every pupil's thinking is considered and prevents pupils from simply copying the answer of a nearby classmate. For example:

- Ask for one row or table at a time to show their whiteboards, rather than looking randomly around the room at every response at once to gauge just a handful of responses
- Begin at the front of the classroom and work through in a consistent order
- Avoid scanning from the back first, as this can encourage pupils nearer the front to copy from others before revealing their own thinking
- Ensure that all pupils from a row or table hold their boards up at the same time and keep them visible until you tell them to put them down
- Use the scan to identify patterns, selecting examples that show success or misconceptions to discuss with the class

6. Independent Learning

Independent learning within PKC Cymru is not viewed as pupils working without guidance. Rather, it is the gradual development of learners who can think, question, apply knowledge and regulate their own learning with increasing confidence. This aligns closely with Estyn's conclusion that "developing learners' ability to think independently, critically and creatively is central to the Curriculum for Wales" and is fundamental to enabling pupils to become "ambitious, capable learners who are ready to learn throughout their lives" (*Developing Learners as Independent Thinkers, Estyn 2025*).

Independence Begins with Knowledge

Central to this approach is the belief that independence is built through knowledge. Estyn's *Developing Learners as Independent Thinkers* found that the strongest schools

“ensured that learners developed secure foundational knowledge ***before*** encouraging them to question, manipulate, or apply it in more complex ways”. This principle underpins the design of PKC Cymru. Independence is not treated as a precursor to knowledge acquisition – knowledge is the foundation upon which independence is built.

Across PKC Cymru, substantive and disciplinary knowledge is carefully sequenced so that pupils develop secure understanding over time. Because essential knowledge has been explicitly taught, revisited and strengthened through retrieval practice, pupils are increasingly able to work independently when analysing historical sources, answering enquiry questions, evaluating geographical evidence or composing extended written responses. Their cognitive capacity is not consumed by trying to remember disconnected facts - instead, it can be directed towards reasoning and justifying their thinking.

Independence Through Explicit Teaching

We emphasise that the role of the teacher remains critical to building pupil independence. Estyn’s *Teaching the Curriculum for Wales* identifies high-quality teaching as being characterised by “clear intentions for learning, well-established routines, and a strong focus on formative assessment”. The report notes that effective teachers “explain learning intentions clearly, use questioning purposefully, and adapt teaching in response to pupils’ progress and misconceptions”. Crucially, Estyn found that pupils demonstrate increasing independence when teaching provides sufficient structure and clarity for them to understand what they are learning, how they are learning it and what success looks like.

PKC Cymru supports this through a consistent lesson structure that gradually builds both pupil confidence and independence. Rather than expecting pupils to work independently before they have secured the necessary knowledge, each lesson is designed to move pupils from supported learning (i.e. *teach, talk task*) towards increasingly independent application of knowledge over time (i.e. *task, step for depth, assessment tasks*).

Independence Through Deliberate Practice and Application

Estyn’s *Enabling Pupils to Become Independent Learners* highlights the importance of encouraging pupils “to try, solve problems, make decisions, think and investigate" and providing opportunities for them to "transfer knowledge and apply their skills to meaningful activities”.

PKC Cymru deliberately builds these opportunities into the curriculum sequence. Knowledge is not built simply for recall; pupils are expected to use it. In humanities, pupils may apply their understanding of a historical period to evaluate the significance of an event, or they may use their knowledge of human and physical processes to explain environment challenges. In science, they may draw upon previously taught concepts to predict outcomes and justify conclusions.

Because pupils have a secure knowledge base, they can make meaningful decisions about how to approach tasks, select the appropriate evidence and justify their reasoning. Independence therefore emerges through application rather than unguided discovery.

Independence Through Questioning and Discussion

Estyn's *Developing Learners as Independent Thinkers* found that the most effective teachers "used a broad range of question types, carefully matched to purpose, to promote independent thinking and deepen understanding". Effective questioning enabled learners to "retrieve and consolidate prior learning, clarify and check understanding, extend their subject knowledge, explore ideas and challenge assumptions".

PKC Cymru places significant emphasis on classroom talk and disciplinary thinking. Lessons are designed around carefully sequenced questions that encourages pupils to connect new learning to prior knowledge. These can take the form of class discussion (i.e. *prior learning, talk tasks*) or can be independently answered (i.e. *task, step for depth).*

Estyn's *Developing Learners as Independent Thinkers* found that the strongest providers "struck a balance between appropriate support and the freedom for learners to think, question and make decisions for themselves". Effective teachers "scaffolded thoughtfully at the outset and then stepped back to allow space for learners to think".

This aligns with the PKC lesson structure, which explicitly teaches knowledge to pupils, allows them to discuss that knowledge through scaffolded practice by discussing it with a partner during a talk task, before then getting pupils to apply the knowledge independently in a task. The result is not simply greater independence in completing tasks but greater independence in thinking.

A Curriculum That Creates Independent Learners

Estyn's *Developing Learners as Independent Thinkers* argues that "thinking is not a skill to be taught in isolation, rather it must be nurtured across all areas of learning and experience". PKC Cymru reflects this. Independence is not confined to isolated projects or enrichment tasks. Instead, it is systematically developed through the acquisition of knowledge, the explicit teaching of substantive knowledge and disciplinary thinking, purposeful application and the gradual transfer of responsibility from teacher to pupil.

In this way, PKC Cymru develops learners who are knowledgeable, confident and increasingly capable of directing their own learning – qualities that lie at the heart of both the Curriculum for Wales and Estyn's vision of effective education.

References

- Teaching the Curriculum for Wales - Teaching the Curriculum for Wales - Estyn
- Enabling pupils to become independent learners - Enabling pupils to become independent learners - Estyn

- Developing learners as independent thinkers – Adroddiad Blynyddol | Annual Report

7. Authentic Learning

This section of the handbook is informed by the evidence summaries available here: Overview - Authentic learning experiences - Resources - Hwb

1. **Authentic Classroom-Based Learning**
2. **Authentic Place-Based Learning**
3. **Authentic Enquiry-Based Learning**
4. **Authentic Collaborative Learning**

1. Authentic Classroom-Based Learning

Authentic Classroom-Based Learning is a pedagogical approach that recognises that deep, meaningful learning is built upon a secure foundation of knowledge and skills. Within this approach, learners progress through a carefully structured sequence, moving from the acquisition of basic knowledge and skills towards increasingly complex cognitive processes. This progression reflects what research tells us about how learning occurs: learners are most successful when they are provided with clear explanations, explicit teaching, appropriate scaffolding and guided practice before being expected to apply their learning independently in unfamiliar or authentic contexts.

This approach aligns closely with the aspirations of the Curriculum for Wales. The Four Purposes require learners to become ambitious, capable learners who can apply knowledge and skills in a range of contexts, enterprising and creative contributors who can solve problems, and informed citizens who can make reasoned decisions. Authentic Classroom-Based Learning supports these aims by ensuring that learners first develop secure disciplinary knowledge before engaging in authentic enquiry and application. Rather than viewing knowledge acquisition and authentic learning as separate processes, this approach sees them as complementary stages of a coherent learning journey.

The Role of Explicit Instruction

At the heart authentic classroom-based learning is the principle that new learning should be carefully taught. Learners cannot be expected to discover complex concepts independently without first being equipped with the necessary background knowledge. Research in cognitive science highlights the limits of working memory and the importance of building knowledge in long-term memory before learners can successfully engage in higher-order thinking tasks (Sweller, 2011). Teachers play an active role in introducing new knowledge, modelling thought processes, providing examples and guiding learners through structured practice.

References:

- Sweller, J., 2011. Cognitive load theory. In *Psychology of learning and motivation* (Vol. 55, pp. 37-76). Academic Press.
- 'An Introduction to Classroom Based Learning' – Available at Overview - Authentic learning experiences - Resources - Hwb

2. Authentic Place-Based Learning

PKC Cymru embraces the principles of authentic, place-based learning by ensuring that disciplinary knowledge is connected to the lived experiences of pupils and the communities in which they live. Research suggests that learning becomes more meaningful when children can relate new knowledge to their social reality and understand its relevance beyond the classroom (Smith, 2002; Hooykaas, 2021). Within the Curriculum for Wales, this approach supports learners to make connections between their learning, their locality, and the wider world while developing the knowledge, skills and dispositions described in the Four Purposes.

Rather than viewing knowledge and authentic learning as competing priorities, PKC Cymru sees them as complementary. Secure disciplinary knowledge in humanities and science provides the foundation that enables pupils to understand, investigate and contribute to real-world contexts. Authentic learning therefore emerges from the application of powerful knowledge to meaningful places, environments and issues.

Place-Based Learning Through Disciplinary Understanding

In humanities, pupils develop an understanding of their locality as part of a wider geographical, historical and cultural narrative. Place-based learning is embedded through carefully selected local studies (e.g. looking at local history in Y1 Stories of the Past or studying local issues in Y5 Our Local Area) that allow learners to explore the unique characteristics of their community while drawing upon broader disciplinary concepts.

Pupils investigate how their local area has changed over time (e.g. transport in Y1 Stories of the past), examining historical sources, maps and artefacts to understand continuity and change. They can explore local landmarks, industries (e.g. farmers and miners in Y5 Democracy in Wales), migration patterns (e.g. mass migration to cities in Y5 Industrial Revolution) or significant events (e.g. invasion in Y2 Romans in Wales), connecting these to national and global developments (i.e. the Roman Empire).

Through geography, learners study the physical and human features of their locality and compare them with other places (e.g. with San Francisco in Y3 Spatial Sense), helping them to understand both the uniqueness of their community and its place within wider geographical systems.

Place-Based Learning from Lived Experience to Disciplinary Understanding

Across the PKC Cymru Humanities curriculum, place-based learning is deliberately sequenced to move from the immediate and personal towards wider, more complex

understandings of place, ensuring that pupils' knowledge is consistently grounded in meaningful local contexts.

In Y1 Stories of the Past, place-based learning begins with pupils' own lived experiences. Pupils explore how aspects of everyday life, such as local transport, have changed over time. This provides a tangible entry point into historical thinking, allowing pupils to connect abstract ideas of 'the past' to features of their own locality.

In Y2 Spatial Sense, place is more explicitly geographical. Pupils engage directly with their environment by:

- Walking around the school building
- Drawing maps of the school site
- Exploring maps of the local area
- Planning routes from school to a chosen destination

These opportunities ground early geographical concepts (e.g. mapping, location, and navigation) in real-world experience, reinforcing pupils' understanding of how geography operates in their daily lives.

In Y3 Settlements, this understanding is extended by pupils explicitly connecting geographical knowledge to their own community. Learning is contextualised through:

- Comparing villages and cities using local examples
- Analysing maps of a local area to identify land use
- Discussing local services such as transport, shops, and healthcare
- Considering the location of their school within the settlement
- Evaluating the advantages and disadvantages of rural and urban living using their own experiences

These approaches allow pupils to interpret their immediate environment through disciplinary concepts, developing both geographical knowledge and a deeper awareness of their community.

In Y4 Spatial Sense, place-based learning incorporates change over time. Pupils investigate how their locality has developed by identifying changes in:

- Roads
- Land use
- Transport
- Housing
- Businesses
- Population

This is supported through the use of maps, grid references, scale, and additional research. By examining how their environment has evolved, pupils develop a stronger understanding of both historical processes and geographical development.

In Y5 Our Local Area, place-based learning becomes more sophisticated, including pupils undertaking more structured fieldwork. This includes:

- Identifying local issues using OS maps
- Conducting field sketches using direct observation and/or photographs
- Planning and carrying out data collection in the local area
- Recording findings accurately during fieldwork
- Representing data through graphs

Here, pupils move beyond observation to analysis, engaging in authentic geographical enquiry about issues that affect their community. In Y6 Welsh Geographical Issues, there is a culmination of place-based learning, linking local contexts to broader national challenges:

- Use OS maps to identify locations connected to a specific issue
- Discuss who is affected and why
- Produce extended written explanations addressing questions such as, why is this issue a challenge for our local area?
- Support their responses with evidence from maps, data, and images

This reflects a mature application of place-based learning, where pupils integrate knowledge, skills, and evidence to understand and explain real-world issues.

Research by Cincera et al. (2019) highlights that such approaches, where pupils actively engage with their local environment and contribute ideas, promote autonomy, collaboration, and a stronger sense of belonging. Crucially, within PKC Cymru, these opportunities are carefully structured so that pupils make meaningful contributions while teachers maintain oversight to ensure learning remains focused, rigorous, and manageable.

In summary, place-based learning within PKC Cymru:

- Anchors knowledge in real and familiar contexts
- Supports progression from personal experience to wider understanding
- Develops pupils' sense of identity and community
- Encourages active, informed engagement with the local and national environment

References:

- 'Authentic Place-Based Learning' – found in Overview - Authentic learning experiences - Resources - Hwb
- Cincera, J., Valesova, B., Krepelkova, S., Simonova, P. and Kroufek, R. (2019) Place-based education from three perspectives.
- Hooykaas, A (2021) Stewarding places through geography in higher education.
- Smith, G. (2002) Place-based education: Learning to be where we are.

3. Authentic Enquiry-Based Learning

The Role of the Teacher

Enquiry-based learning (EBL) is often characterised by learners exploring questions, problems and issues through investigation, discussion and enquiry. Within some

interpretations of EBL, the teacher's primary role is to facilitate learning by creating opportunities for exploration and supporting pupils in constructing their own understanding.

Whilst PKC Cymru recognises the value of enquiry and investigation as important features of effective learning, we do not adhere to pedagogical approaches that place excessive emphasis on unguided or minimally guided discovery. Instead, our approach is informed by evidence about how pupils learn and the central role that teachers play in supporting learning.

Research by Kirschner, Sweller and Clark (2006) cautions against approaches that rely heavily on minimally guided instruction, highlighting the challenges placed on pupils' working memory when they are expected to discover complex knowledge independently. This does not mean that enquiry lacks value; rather, it suggests that enquiry is most effective when supported by secure knowledge, expert guidance and carefully designed scaffolding. Consequently, PKC Cymru views enquiry and explicit teaching as complementary rather than opposing approaches.

Within PKC Cymru, teachers are viewed as subject experts who actively shape, guide and support pupils' thinking. Through careful curriculum planning and responsive classroom practice, teachers help learners engage with increasingly complex ideas whilst ensuring that essential knowledge and concepts are securely understood.

Across PKC partner schools, teachers play an active role in learning by:

- Carefully selecting and sequencing the knowledge, concepts and skills pupils need to learn.
- Defining the scope of enquiries to ensure learning remains purposeful and manageable.
- Modelling disciplinary thinking and subject-specific methods of enquiry.
- Scaffolding pupils' questioning, analysis and interpretation.
- Providing explanations, instruction and feedback to secure understanding.
- Addressing misconceptions and extending learning through questioning and discussion.
- Gradually increasing learner independence as knowledge and expertise develop.

This approach reflects PKC Cymru's commitment to evidence-informed practice rather than adherence to any particular educational ideology. Enquiry remains an important feature of learning, but it is strengthened by expert teaching, carefully sequenced knowledge and purposeful curriculum design. In this way, teachers play a central role in ensuring that all learners can successfully access, understand and apply the curriculum whilst developing the confidence and independence to think critically for themselves.

The Enquiry Cycle in Practice

PKC Cymru’s approach to enquiry reflects the widely recognised enquiry cycle (Pedaste et al., 2015), but crucially it is embedded within a carefully sequenced and increasingly independent

curriculum rather than being treated as a stand-alone or isolated model. This ensures that pupils are supported to engage meaningfully with each stage of enquiry as their substantive knowledge and disciplinary understanding develop over time.

Across science and humanities, pupils gradually become familiar with the full cycle of enquiry, which typically includes:

1. **Orientation** – pupils are introduced to a meaningful problem, phenomenon or question that is carefully framed by the teacher (e.g. 'What do settlements need?' in Year 3 Settlements or a simple investigative question in early science units). At this stage, the focus is on curiosity and comprehension, supported by strong teacher direction to ensure understanding of the context.
2. **Conceptualisation** – pupils begin to generate hypotheses or sub-questions. Initially this is highly scaffolded, with teachers modelling how to turn observations or prior learning into testable ideas. Over time, pupils become more independent in suggesting lines of enquiry, drawing more securely on accumulated knowledge.
3. **Investigation** – pupils explore evidence through structured activities such as experiments, fieldwork, maps, or texts. The level of autonomy increases progressively across year groups, from closely guided tasks in early years to more deliberate selection of methods, variables, and sources in years 5 and 6.
4. **Conclusion** – pupils draw together findings and make reasoned judgments. Early conclusions may be descriptive and supported by teacher prompts, while later work requires pupils to synthesise evidence and explain patterns using increasingly precise disciplinary vocabulary.
5. **Discussion** – pupils engage in structured dialogue about interpretations, comparing outcomes, evaluating reliability, and refining their understanding. This stage is particularly important in developing disciplinary thinking, as pupils learn that knowledge is constructed, tested and improved through critique.

Coherent Progression of the Enquiry Cycle

PKC Cymru incorporates enquiry in a disciplined and purposeful way, ensuring pupils engage with questions while still building secure knowledge. For example, in the science curriculum, enquiry is carefully structured across the curriculum so that pupils move from guided participation in simple investigations to increasingly independent and scientific reasoning. This highlights our gradual release model where knowledge acquisition and enquiry develop in tandem. This approach also ensures that enquiry supports, rather than replaces, the accumulation of secure substantive knowledge, as outlined below:

- In Year 1 Materials, enquiry begins with highly scaffolded investigation. Pupils are introduced to the concept of an investigation as a way of answering a question, alongside early disciplinary concepts such as prediction. The teacher models each stage of the process, including posing a question, planning a simple test and recording results. Pupils then carry out straightforward enquiries (e.g. selecting suitable materials for a purpose), focusing on observation and simple classification. At this stage, enquiry is largely imitative, with pupils learning how to work scientifically through structured guidance.

- In Year 2 Plants, pupils engage in comparative testing. They explore questions such as what plants need to grow by changing one condition (light or water) and observing outcomes over time. Pupils start to make predictions based on prior knowledge and record observations more systematically using diagrams and simple written explanations. While still teacher-led, enquiry at this stage introduces the idea that evidence can be compared and used to answer questions.
- In Year 3 Forces and Magnets, enquiry becomes more purposeful and analytical. Pupils design simple tests to investigate relationships, such as testing the strength of different magnets. They select methods (with guidance), take measurements and present results in tables and diagrams. Importantly, pupils begin to interpret findings and challenge misconceptions (e.g. that larger magnets are always stronger). Enquiry here moves beyond observation towards explanation, supported by their growing scientific knowledge.
- In Year 4 Electricity, pupils apply enquiry to more abstract concepts, such as electrical conduction. They predict outcomes, test materials within a controlled setup and draw conclusions using scientific vocabulary (e.g. conductor, insulator). There is a clearer expectation that pupils use evidence to justify their conclusions and explain phenomena. Enquiry becomes a tool for reasoning, with pupils connecting practical outcomes to underlying scientific ideas.
- In Year 5 Light, enquiry shifts towards hypothesis-driven investigation. Pupils formulate testable claims (e.g. about shadows) and plan how to evaluate them. They begin to recognise and control variables, ensuring fairness in testing, and make decisions about how to record and present data. Pupils also use results to make further predictions, demonstrating a deeper understanding of causality and the iterative nature of scientific enquiry.
- In Year 6 Human Body, pupils engage in fully structured fair tests with increased independence. They explicitly identify independent, dependent and control variables and understand how these contribute to validity and reliability. The investigation (e.g. examining the effect of exercise on pulse rate) requires pupils to plan, conduct, record and evaluate their work systematically. Crucially, pupils reflect on the reliability of their results and consider improvements, demonstrating an understanding of enquiry as a rigorous, evaluative process.

In summary, enquiry-based learning within PKC Cymru:

- Is carefully scaffolded to balance curiosity with secure knowledge acquisition
- Develops pupils' ability to ask questions, interpret evidence and construct explanations over time
- Progresses from more structured, teacher-led investigation to increasingly independent reasoning
- Ensures enquiry is purposeful and disciplined, rather than open-ended or unguided
- Builds pupils' capacity to use evidence to explain, justify and evaluate ideas
- Positions enquiry as a tool for deepening understanding alongside explicit instruction and substantive knowledge

References:

- ‘An Introduction to Enquiry-Based Learning’ – found in Overview - Authentic learning experiences - Resources - Hwb
- Greenwood, R., Austin, S., Bacon, K. and Pike, S. (2022) Enquiry-based learning in the primary classroom: student teachers’ perceptions.
- Kirschner, P.A., Sweller, J., & Clark, R.E. (2006) Why Minimal Guidance During Instruction Does Not Work: An Analysis of the Failure of Constructivist, Discovery, Problem-Based, Experiential, and Inquiry-Based Teaching.
- Pedaste, M., Maeots, M., Siiman, L.A., de Jong, T., van Riesen, S.A.N., Kamp, E.T., Manoli, C.C., Zacharia, Z.C., and Tsourlindaki, E. (2015). Phases of inquiry-based learning: definitions of the inquiry cycle.
- Sharples, M., McAndrew, P., Weller, M., Ferguson, R., FitzGerald, E., Hirst, T., Mor, Y., Gaved, M. and Whitelock, D. (2012). Innovating Pedagogy 2012: Open University Innovation Report 1.
- Williamson, B. & Morgan, J. (2009) Educational reform, enquiry-based learning and the re-professionalisation of teachers.

4. Authentic Collaborative Learning

Collaboration Through Talk

Research shows that the benefits of collaborative learning arise not simply from working in groups but from the quality of interaction between learners (Dillenbourg et al, 1999; Johnson & Johnson, 2006). Meaningful learning occurs when children influence one another's thinking by explaining ideas, asking questions, justifying opinions and responding thoughtfully to different perspectives. For this reason, collaboration within PKC Cymru is built primarily through high-quality talk tasks.

These structured discussions enable learners to:

- explain and clarify their thinking;
- justify ideas using evidence;
- compare different viewpoints;
- identify misconceptions;
- refine their understanding through discussion;
- co-construct solutions to problems;
- and develop increasingly precise academic language.

Rather than dividing work into separate parts, learners build understanding together. The discussion itself becomes an essential part of learning rather than simply preparation for recording an answer.

Talk Before Task

Children are not expected to engage in collaborative learning without first developing sufficient knowledge through explicit teaching. Effective collaboration depends upon learners

having developed an understanding of the content taught and appropriate vocabulary to discuss it.

Lessons therefore follow a carefully sequenced approach. Teachers first introduce new knowledge, vocabulary and concepts through explicit instruction, modelling expert thinking and making disciplinary processes visible. Once learners have developed an initial understanding, they participate in carefully structured collaborative talk tasks that enable them to explain and refine their understanding through purposeful dialogue. Learning then culminates in application of knowledge in an independent task, allowing each child to demonstrate and consolidate their own understanding.

This progression from explicit teaching to collaborative talk, then to independent practice ensures that discussion serves to deepen and extend learning rather than replace direct instruction. It enables learners to benefit from shared thinking while maintaining individual accountability and providing teachers with clear evidence of each child's understanding.

The Teacher's Role During Classroom Talk

During collaborative talk, the teacher's role shifts from being the primary source of information to guiding learning through purposeful interaction. Rather than directing every aspect of the discussion, teachers create the conditions in which learners can think deeply and construct understanding.

Teachers pose rich questions that stimulate discussion and then carefully monitor conversations to assess understanding. They identify misconceptions as they arise, extend thinking through questioning and then remind pupils of the key ideas that emerge from discussion to reinforce important learning.

In summary, authentic collaborative learning within PKC Cymru:

- Is rooted in explicit teaching and strengthened through purposeful collaborative talk
- Develops pupils' understanding through carefully structured discussion, questioning and shared reasoning
- Ensures every learner actively contributes to the collaborative construction of knowledge
- Balances collaborative dialogue with independent application, enabling pupils to deepen understanding while demonstrating individual learning

References:

- Dillenbourg, P., Baker, M., Blaye, A., & O'Malley, C. (1995). The evolution of research on collaborative learning. In E. Spada, & P. Reiman (Eds.), Learning in humans and machine: towards an interdisciplinary science (pp. 189-211). Oxford: Elsevier.
- Johnson, R. T., & Johnson, D. W. (2006, June). Cooperative learning in the science classroom. Physical Sciences Magazine, pp. 19-20.

8. Outdoor Learning

Outdoor learning in PKC Cymru is a carefully planned pedagogical approach that extends learning beyond the classroom and provides authentic opportunities for pupils to acquire and apply knowledge. This aligns closely with the Welsh Government's position that outdoor learning is a key pedagogical approach for Curriculum for Wales and supports learners' physical wellbeing, mental health, engagement and academic development (Welsh Government, 2021).

The importance of outdoor learning has been increasingly recognised in recent years. Research commissioned by the Welsh Government concluded that concluded that "outdoor learning played an increased role, both in and out of school, in supporting physical and mental wellbeing" (French et al., 2021, p.79). Furthermore, Curriculum for Wales guidance states that "being outdoors can lead to high levels of well-being, confidence and engagement" and provides authentic opportunities for learners to develop and consolidate cross-curricular skills.

Outdoor Learning as an Extension of the Classroom

PKC Cymru reflects Forbes and Hollyhock's (2014) concept of outdoor learning as an 'extended classroom'. In this model, learning extends beyond the school building into the school grounds, local community and wider world.
Outdoor learning is therefore not viewed as separate from curriculum learning. It provides meaningful contexts through which pupils can apply disciplinary knowledge and make connections between what they learn in the classroom and the world around them.

Outdoor Learning Through Knowledge-Rich Experiences

Research into outdoor learning has noted that many outdoor experiences focus primarily on wellbeing or physical activity, with fewer opportunities for fieldwork, local heritage, creativity or learning about Wales. PKC Cymru deliberately addresses this through carefully planned curriculum experiences.

In Humanities, pupils regularly use outdoor environments to develop geographical understanding and fieldwork skills. In Year 2, pupils walk around the school grounds to create maps of the site as part of their study of spatial sense. By Year 5, pupils sketch maps of the local area and collect data about issues affecting their community. In Year 6, pupils undertake geographical enquiries into local environmental challenges, including researching an issue in the local area.

Similarly, Science and technology provides regular opportunities for pupils to engage directly with the natural world. In Year 1, pupils undertake sound walks around the school grounds, investigate weather conditions using thermometers and wind vanes, observe cloud formations and identify deciduous and evergreen trees within the local environment. They

also explore environmental issues within their locality and consider practical ways to reduce pollution where they live.

As pupils progress through the curriculum, these experiences become increasingly sophisticated. Year 2 pupils investigate habitats and microhabitats around the school grounds and create botanical sketches of plants they observe. Year 3 pupils observe plant growth and conduct investigations into how shadows change throughout the day. In Year 4, pupils use outdoor spaces to investigate sound, study local environmental change and classify plants found on the school site. Year 5 pupils examine local ecosystems through the study of an oak tree, while Year 6 pupils continue to apply scientific enquiry skills through investigations that can be extended into outdoor contexts.

These experiences ensure that outdoor learning is firmly rooted in disciplinary knowledge while providing authentic contexts in which pupils can apply what they have learned.

Outdoor Learning and Cynefin

A key feature of Curriculum for Wales is the development of cynefin. Welsh Government guidance describes cynefin as connecting people with the place where they belong and encouraging engagement with the environment around them.

Outdoor learning plays a central role in helping pupils develop this sense of place. Through regular engagement with the school grounds, local area and wider Welsh landscape, pupils develop a deeper understanding of their community, environment and heritage.

By studying local environments, collecting fieldwork data, investigating local issues and exploring natural and built landscapes through PKC Cymru, pupils develop a stronger sense of belonging and a greater understanding of the relationship between people and place.

Outdoor Learning Through Wellbeing, Engagement and Inclusion

A substantial body of evidence demonstrates the positive impact of outdoor learning on pupil wellbeing and engagement. Curriculum for Wales guidance highlights that outdoor environments support social, emotional, spiritual and physical development while providing opportunities for learners to experience awe, wonder, curiosity and creativity (Hwb, *Pedagogy – Being Outdoors*).

PKC Cymru deliberately incorporates outdoor learning throughout the curriculum to provide these benefits in meaningful and academically purposeful ways. Rather than being limited to occasional enrichment activities, outdoor experiences are embedded within curriculum sequences and are directly linked to the acquisition and application of knowledge.

Mannion et al (2015) found that outdoor learning increases engagement, collaboration and enjoyment across a range of curriculum subjects. PKC Cymru supports this through regular opportunities for pupils to investigate, observe and interact with the world around them. For example, younger pupils undertake sound walks, weather observations and plant studies in

their local environment, while older pupils engage in fieldwork, environmental enquiries and geographical investigations. These experiences provide authentic contexts for learning and encourage pupils to see relevance and purpose in the knowledge they acquire.

By embedding outdoor learning across year groups and Areas of Learning and Experience, PKC Cymru ensures that pupils benefit not only from enhanced curriculum knowledge but also from the personal, social and emotional development that outdoor learning is uniquely positioned to provide.

References:

- Welsh Government (2021). A Curriculum for Wales. Link to Introduction to Curriculum for Wales guidance
- Hwb. Pedagogy – Being Outdoors
- Teaching and learning in the outdoors: the current state of outdoor learning in schools in Wales
- Forbes, A. and Hollyhock, B. (2014) Outdoor Education and the Extended Classroom.
- Mannion, G., Mattu, L. and Wilson, M. (2015) Teaching, Learning and Play in the Outdoors: A Survey of School and Pre-school Provision in Scotland.
- Marchant, E., Todd, C., Cooksey, R., Dredge, S., Jones, H., Reynolds, D., Stratton, G., Brophy, S. and Lyons, R. (2019) Curriculum-based Outdoor Learning for Children Aged 9–11: A Qualitative Analysis of Pupils' and Teachers' Views.
- Maynard, T., Waters, J. and Clement, J. (2011) Child-Initiated Learning, the Outdoor Environment and the 'Underachieving' Child.

9. Digital Competence Framework (DCF)

Digital competence is a fundamental component of the Curriculum for Wales and one of the three cross-curricular responsibilities alongside literacy and numeracy. The Welsh Government defines digital competence as "the set of skills, knowledge and attitudes that enable the confident, creative and critical use of technologies and systems" (Welsh Government, 2018b).

Within PKC Cymru, digital competence is not viewed as a standalone subject or as the isolated teaching of technological skills. It is developed through the purposeful application of technology to support learning across the curriculum. This reflects the intention of the DCF, which emphasises that digital competence should be developed through "naturally occurring, meaningful ways" instead of being artificially imposed into every subject area.

The PKC Cymru approach recognises that digital competence, like literacy and numeracy, develops over time through carefully planned experiences. It is advised that digital skills are taught explicitly where necessary and then applied across a range of curriculum contexts so that pupils become confident users of technology.

Digital Competence as a Cross-Curricular Responsibility

The DCF was developed to ensure that all learners acquire the knowledge, skills and attitudes required to participate in an increasingly digital society. Welsh Government guidance states that digital competence "focuses on developing digital skills which can be applied to a wide range of subjects and scenarios that are transferrable to the world of work" (Welsh Government, 2018a).

Within PKC Cymru, suggested opportunities to develop digital skills are carefully mapped to ensure that technology enhances learning and supports curriculum aims rather than becoming an end in itself. Pupils use digital technologies to research, communicate, create, analyse and present information. These opportunities are planned deliberately to support curriculum content and disciplinary thinking while also developing the skills outlined within the DCF.

At the same time, PKC Cymru recognises that digital competence should not be forced into every lesson. The DCF itself makes clear that meaningful application is more important than compliance, and technology should be used when it genuinely adds value to learning.

Digital Competence Begins with Knowledge

Central to PKC Cymru is the principle that successful application depends upon secure knowledge. This applies equally to digital competence.

The DCF notes that its progression framework is designed to "view the learner holistically and provide several pathways of possible development, broken down into small steps and individualised for each learner". Digital competence is therefore developed progressively. Pupils are first taught foundational knowledge required to use technology safely and purposefully. As this knowledge becomes secure, learners are increasingly able to apply digital tools independently and make informed decisions about their use.

For example, pupils must first understand how information is organised and searched before they can evaluate online sources effectively. Similarly, they must understand principles of online safety before they can participate confidently in digital environments.

Citizenship

Within PKC Cymru, ideas for how teachers can promote digital citizenship are planned to help pupils explore how digital technologies influence individuals, communities and society, while developing an understanding of online safety, ethical behaviour, responsible communication and digital wellbeing. Through discussion and the evaluation of information from digital sources, learners are encouraged to become thoughtful and informed participants in the digital world and increasingly responsible consumers and creators of digital content.

Interacting and Collaborating

Within PKC Cymru, suggested opportunities for digital communication and collaboration arise naturally through investigation and the sharing of learning. Pupils learn how digital tools can be used to communicate ideas, organise information and work collaboratively with others. These tasks can help develop an understanding of appropriate methods of storing, sharing and presenting information while learning to contribute positively and responsibly to collaborative tasks and projects.

Producing

Within PKC Cymru, pupils can use digital technologies to communicate ideas, present knowledge and create content for a range of purposes. They learn that effective digital production requires both creativity and critical evaluation. As learners progress through the curriculum, they create increasingly sophisticated outcomes that require greater consideration of audience, purpose and effectiveness. They learn to plan carefully, select appropriate tools, evaluate their work critically and improve outcomes through reflection and refinement.

Data and Computational Thinking

Within PKC Cymru, these habits of thinking can be developed across the curriculum. Pupils can learn to collect, organise, interpret and present data, drawing conclusions from the information available to them. Through tasks and investigations, learners can be encouraged to think logically, identify patterns, test ideas and evaluate solutions. These experiences can help develop the analytical and reasoning skills that underpin both scientific understanding and digital competence.

References:

- Welsh Government (2018a) Digital Competence Framework Guidance - A curriculum for Wales – a curriculum for life.
- Welsh Government (2018b) Digital Competence Framework: Your questions answered. Update – June 2018.

10. Curriculum Leadership

a. The role of Senior Leaders

Successful curriculum enactment is strengthened when senior leaders are actively engaged in curriculum thinking and have a secure understanding of the principles, purposes and progression underpinning their curriculum. This includes understanding what learners are being taught, how learning is sequenced over time, and the knowledge, skills and experiences that support progression. Regular professional dialogue about the curriculum can help ensure that curriculum design, pedagogy and assessment remain closely aligned to the needs of learners and the aspirations of the Curriculum for Wales.

Leadership of the curriculum is most effective when it is viewed as a shared responsibility. Whilst senior leaders play an important role in establishing strategic direction and ensuring coherence, subject/ AoLE leaders bring valuable disciplinary expertise and curriculum insight. Through ongoing collaboration, professional dialogue and shared ownership, leaders at all levels can contribute meaningfully to curriculum development and improvement.

In many PKC partner schools, curriculum development is supported through a culture of collaborative leadership, where improvement priorities are understood across the organisation and translated into subject/ AoLE-specific actions. This helps ensure that whole-school priorities, curriculum development and classroom practice remain connected, whilst allowing leaders to contribute to continuous improvement within their areas of responsibility.

The following questions can be used to support regular professional dialogue with middle leaders, subject leaders and members of the senior leadership team.

- By the end of the Progression Step, what do you want all pupils to know and be able to do?
- What is the impact of having taught (choose a specific sequence of learning) in year X, when the child gets into year Y?
- How is your assessment designed to ensure that you can tell whether pupils are making good progress across the curriculum?
- How do you know that you are being ambitious for your pupils?
- How do you ensure all children can access the curriculum? What scaffolds and support do you provide for learners, including children with ALN?

The role of Subject/AoLE Leaders

a. Curriculum Oversight
b. Supporting High-Quality Learning
c. Promoting Coherence and Consistency
d. Managing Resources
e. Evidence-Gathering, Reviewing and Improving
f. Improvement Planning

---

a. Curriculum Oversight

Schools will develop their own approaches to curriculum leadership; however, effective curriculum enactment is strengthened when leaders maintain a clear understanding of the curriculum experienced by learners across the school.

Subject/ AoLE leaders play an important role in supporting this understanding. They develop knowledge of the curriculum content, progression and pedagogical approaches within their

area and help colleagues understand how learning builds over time. Within PKC Cymru, leaders are supported by clearly sequenced curriculum frameworks that enable them to consider progression from Year 1 to Year 6 and to understand how individual units contribute to broader curriculum aims.

b. Supporting High-Quality Learning

Subject/ AoLE leaders play a key role in supporting the quality of teaching and learning within their area. Through engagement with curriculum development, professional learning and collaborative enquiry, leaders can help colleagues deepen their understanding of effective practice and curriculum implementation.

Consideration of what high-quality learning looks like, both generally and within individual disciplines, is an important aspect of the role. Effective curriculum enactment depends not only on curriculum design but also on how learning is experienced by pupils in the classroom. Leaders can support staff in considering approaches that help all learners access, retain and apply knowledge successfully, whilst ensuring learning remains ambitious and inclusive.

c. Promoting Coherence and Consistency

Many PKC partner schools find that shared routines and consistent approaches support pupils in engaging successfully with learning. Consistency can help learners focus their attention on the content being taught rather than navigating changing expectations from lesson to lesson.

Schools may choose to establish common approaches to lesson structure, classroom routines and learning environments in ways that reflect their own context. Where appropriate, leaders can support colleagues in developing shared expectations that contribute to a coherent experience for learners whilst maintaining professional autonomy.

Learning environments can also be considered as part of this process. Some schools choose to display key knowledge, vocabulary, enquiries and curriculum content in ways that support learning and help pupils make connections with current and previous learning.

d. Managing Resources

For a curriculum to be enacted successfully, staff need access to appropriate resources, materials and equipment. School leaders and governors determine how resources are allocated, whilst subject/ AoLE leaders often support decisions about resource use within their curriculum area.

An awareness of available resources and future requirements can help leaders plan effectively and ensure that curriculum materials remain accessible, relevant and sustainable. Many schools find it useful to maintain inventories of specialist resources and regularly

review whether existing provision continues to meet the needs of learners and the curriculum.

e. Evidence-Gathering, Review and Improvement

Schools use a range of approaches to understand the impact of their curriculum and identify opportunities for further development. Evidence may come from pupil work, professional dialogue, learner voice, lesson visits, curriculum reviews or other sources that provide insight into learners' experiences and progress.

Reviewing this evidence enables leaders and staff to reflect on strengths, identify priorities and consider the effectiveness of curriculum implementation. This process supports ongoing improvement and helps ensure that decisions are informed by a broad understanding of teaching, learning and curriculum impact.

Across PKC partner schools, evidence-gathering is viewed not as an end in itself but as part of a continuous cycle of reflection, evaluation and improvement that supports both learners and staff.

f. Improvement Planning

Many schools use improvement planning to translate curriculum priorities into practical actions. Effective plans are typically informed by self-evaluation, evidence and the specific context of the school.

Improvement planning is most effective when priorities are clearly linked to learner outcomes and when larger goals are broken down into manageable steps. Clear timescales, success criteria and opportunities for review can help schools monitor progress and adapt plans where necessary.

11. Self-Evaluation, Professional Enquiry and Continuous Improvement

The Curriculum for Wales places schools at the heart of curriculum design and improvement. To support this, schools need approaches that help them understand the impact of their curriculum on learners and identify opportunities for development. Across PKC partner schools, a range of evidence sources are used to support self-evaluation, professional dialogue and continuous improvement.

The purpose of gathering evidence is not simply to check whether processes are being followed, but to develop a richer understanding of how learners experience the curriculum, the progress they are making and the effectiveness of curriculum implementation. Effective

self-evaluation helps schools identify strengths, inform improvement priorities and ensure that curriculum decisions are responsive to the needs of learners.

Evidence should be gathered in a supportive and proportionate way that encourages professional reflection, collaboration and continuous improvement. A wide range of evidence may contribute to this understanding and no single source should be used in isolation. As a result, schools often draw upon multiple forms of evidence to build a broad picture of curriculum quality and learner progress.

It is important to recognise that not everything that matters can be easily measured. Evidence should be used thoughtfully and considered alongside professional judgement, school context and the wider aims of the curriculum.

Many PKC partner schools draw upon a combination of the following approaches when evaluating curriculum implementation and its impact on learners:

- Data
- Learner voice
- Outcomes
- Lesson observations
- Learning walks
- Curriculum planning and resource reviews
- Professional feedback and coaching conversations

Data

Assessment information can provide valuable insight into learner progress and curriculum impact when used carefully and purposefully. Schools may draw upon both quantitative and qualitative information to understand how effectively the curriculum is supporting learners over time.

Evidence is most useful when it informs decision-making, curriculum refinement and improvement planning. Rather than collecting information for its own sake, schools should consider what they need to understand about learner progress and curriculum effectiveness before deciding what evidence is required.

Information relating to groups of learners, including those with ALN, learners eligible for free school meals, EAL learners and other groups within the school community, can support thoughtful consideration of equity and curriculum access for all learners.

Ultimately, assessment information is most valuable when it helps schools understand how learners are progressing and what improvements may further support their success.

Learner Voice

Pupils are central to curriculum evaluation.

Learner voice is most powerful when it moves beyond general satisfaction surveys and focuses on what learners know, understand and can do. Through thoughtful discussion, leaders and teachers can develop a better understanding of how learners experience teaching and learning, what knowledge they retain and how effectively they can apply their learning.

Curriculum-informed learner voice may explore:

- Learning behaviours and attitudes
- Experiences of teaching and learning
- Knowledge and understanding
- Disciplinary thinking
- Conceptual understanding
- Connections across learning

For example, learners may be asked:

- What helps you when learning something new?
- How does a historian find out about the past?
- What is a geographer investigating when they carry out fieldwork?
- How does this learning connect with something you studied previously?
- What knowledge or ideas do you remember from this unit?

Such discussions often provide valuable insight into the enacted curriculum and can help schools evaluate whether learning is having the intended impact.

Outcomes

Reviews of learners' work can contribute to understanding how knowledge, skills and understanding develop over time. Looking at written work, practical outcomes and other evidence of learning can help schools identify patterns, strengths and areas for further development.

These reviews are often most useful when considered alongside learner voice and classroom observations. Whilst evidence in books can provide insight into curriculum implementation, it does not on its own demonstrate what learners have retained or understood over time.

When reviewing learners' work, schools may consider:

- How learning builds over time
- The development of knowledge and concepts

- Opportunities for practice and application
- The quality of support and scaffolding
- Evidence of progression
- Links to prior learning
- Growing independence and sophistication in learners' responses

The emphasis should remain on understanding learning and progression rather than focusing solely on presentation or task completion.

Lesson Observation

Classroom observations can support professional learning, reflection and curriculum development. In many schools, observations are most effective when approached as opportunities for collaborative improvement rather than judgement.

Professional dialogue before and after observations can help teachers identify areas of focus, reflect on practice and consider how teaching approaches support learner progress. Such discussions encourage ongoing professional growth and contribute to a culture of shared learning.

When observing classrooms, it is important to remember that visible performance during a lesson does not necessarily provide a complete picture of long-term learning. Observations are therefore most powerful when considered alongside other sources of evidence, including learner voice, assessment information and reviews of learner work.

A focus on curriculum implementation, learner participation, disciplinary thinking and progression can often provide richer insights than looking at isolated classroom activities.

Learning Walks

Learning walks can help leaders and teachers develop a broader understanding of how the curriculum is experienced across the school. They are often most effective when focused on collective strengths, areas for development and shared improvement priorities rather than individual performance.

Schools may choose to focus learning walks on particular aspects of curriculum implementation, such as:

- Use of vocabulary
- Disciplinary approaches
- Retrieval and recall
- Classroom routines
- Questioning
- Inclusion and support

Findings can then be used to inform professional dialogue, curriculum refinement and future improvement activity.

Curriculum Planning and Resources

Reviewing curriculum planning and resources can help schools understand how effectively the intended curriculum is being translated into classroom practice.

Questions for reflection may include:

- Are the intended knowledge, skills and concepts clear?
- How does learning build on prior learning?
- Are learners supported to make progress over time?
- How are misconceptions anticipated and addressed?
- How is the curriculum made accessible for all learners?
- How are learners challenged and supported appropriately?
- How effectively do resources support learning?

Professional Feedback and Coaching

Professional feedback is most powerful when it supports reflection, development and professional learning. Across many PKC partner schools, feedback conversations form part of a broader culture of coaching, collaboration and continuous improvement.

Constructive feedback can help teachers refine their practice, deepen their understanding of curriculum implementation and consider how their teaching supports learner progress. Importantly, meaningful feedback requires time for reflection, discussion and follow-up support.

When combined with professional trust and a commitment to continuous improvement, feedback can contribute significantly to strengthening teaching, learning and curriculum enactment across the school.

12. Learner Voice

Within PKC Cymru, learner voice is understood as more than participation in school councils, committees and leadership groups. While these structures have value, meaningful learner voice is rooted in pupils' active engagement with their learning: understanding what they are learning, articulating their thinking, asking questions and recognising how their learning connects over time. This reflects the highly effective practice described in Estyn's *Sector Report 2024-2025*, where teachers used a dialogical approach to learning that ensured "pupils were active participants in their learning" and where discussion helped pupils to deepen their understanding and consider concepts from different perspectives.

Learner Voice Through Dialogue and Participating in Learning

Estyn's *Sector Report 2024–2025* highlights particularly effective practice where teachers "built on pupils' strong oracy skills to implement a highly successful dialogical approach to supporting pupils' progress". As a result, pupils "talking about their learning further developed their understanding of concepts and helped them think about them from different perspectives".

This is embedded within the structure of PKC lessons. Every lesson includes opportunities for pupils to discuss ideas and respond to the views of others through carefully planned talk tasks. These discussions are not incidental; they are deliberately designed to help pupils process and deepen their understanding of curriculum content. These intentional opportunities help pupils to clarify their thinking and to listen to alternative perspectives.

The emphasis on structured talk ensures that every pupil has a voice, rather than privileging the most confident pupils. Every child can contribute through partner discussion or whole-class questioning. This reflects Estyn's finding that successful schools provided "continuously high-quality opportunities to practise, refine and develop their talk", creating a secure foundation for the increasingly sophisticated communication skills pupils need as they progress through education (*Sector Report 2024–2025*).

Learner Voice Through Understanding Learning

Estyn's *Inspecting Attitudes to Learning* guidance highlights the importance of pupils being able to "explain the ideas and concepts they are learning about and understand how these fit in with the rest of their learning". Inspectors look for pupils who can "describe the skills they have improved or knowledge they have gained during the lesson and relate this to previous learning or other subjects/topics".

The structure of PKC Cymru supports this directly. Lessons begin with the retrieval and review of prior learning, helping pupils to recognise connections between new knowledge and what they already know. Teachers will explicitly reference previous learning and make curriculum progression visible – this not only helps pupils to understand what they are learning but why it matters and how it fits within a broader sequence of knowledge.

Consequently, pupils develop the language and confidence to discuss their learning with increasing sophistication. They can explain what they have learned, identify how their understanding developed over time and articulate links across topics, subjects and areas of learning. This gives pupil voice substance because pupils have a secure body of knowledge about which they can speak thoughtfully and confidently.

Learner Voice Through Collaborative Learning

Estyn's *Developing Learners as Independent Thinkers* highlights the value of collaborative learning, noting that in effective classrooms, "learners discussed ideas, evaluated options

and supported each other through challenges". These approaches helped learners develop "self-regulation and a clearer understanding of progress".
The talk task within PKC Cymru lessons provides a regular mechanism for this type of collaborative learning. Pupils are expected to explain ideas, justify their reasoning and build upon the contributions of others. Through these discussions, pupils learn that their voice has value while also developing the ability to listen to other viewpoints.

Estyn's *Inspecting Attitudes to Learning* guidance further notes that pupils should be able to "articulate how working with their peers helps them to develop their own skills". Regular opportunities for structured discussion ensure that pupils experience learning as a collaborative endeavour, recognising that knowledge can be strengthened through dialogue.

Learner Voice Through Curriculum Engagement

Estyn's *Enabling Pupils to Become Independent Learners* emphasises that, "the pupil's voice has a prominent place within the school, and teachers listen to and act on pupils' ideas and investigative questions". The report notes that this "engages pupils' interest in learning from the outset and is a key part of nurturing independent learners".

Within PKC, pupil voice does not determine the curriculum content pupils study; it shapes how pupils engage with that content. Teachers create opportunities for pupils to ask questions, pursue lines of enquiry and contribute ideas during class discussions - this is central to the responsive teaching approach that PKC advocates. As pupils' knowledge grows, so too does their capacity to ask increasingly thoughtful and informed questions.

This approach means pupil voice is grounding in learning, rather than detached from it. Pupils are encouraged to be curious and contribute meaningfully because they possess the necessary knowledge to do so.

A Knowledge-Rich Approach to Learner Voice

Within PKC Cymru, learner voice is not treated as an isolated or separate element, but as a natural outcome of high-quality teaching and learning. Though structured dialogue, explicit teaching, collaborative discussion and meaningful opportunities to contribute, pupils become active participants in their learning. As Estyn's *Sector Report 2024-2025 (Primary)* demonstrates, when pupils are given regular opportunities to talk about their learning, they develop deeper understanding and coming increasingly confident contributors to both classroom learning and wider school life.

By ensuring that pupils have sure knowledge, a rich vocabulary and frequent opportunities to articulate their thinking, PKC Cymru creates the conditions in which authentic learner voice can flourish.

References:

- Estyn Sector Report 2024 – 2025 (Primary)

- Inspecting attitudes to learning - Supplementary guidance: Inspecting attitudes to learning - Estyn
- Developing learners as independent thinkers – Adroddiad Blynyddol | Annual Report

13. Inclusion

Inclusion is a fundamental principle of high-quality curriculum design. Within PKC Cymru, inclusion is not viewed as an additional layer of provision or a collection of individual adjustments; it is designed into the curriculum itself.

High-quality teaching is the first line of inclusion. This approach benefits teachers and pupils. For teachers, it reduces the need for constant individual adaptations by embedding accessibility into everyday classroom practice. For pupils, it ensures that everyone can access the essential knowledge and disciplinary thinking of each subject, whether that is interpreting sources in history, conducting investigations in science or applying geographical skills through mapwork and fieldwork.

Inclusive teaching does not mean reducing expectations or simplifying the curriculum. Instead, it removes unnecessary barriers while maintaining academic ambition and subject rigour. It is built upon clear explanations, effective modelling, carefully planned scaffolding, and deliberate opportunities for pupils to develop their understanding. School leaders should champion an inclusive curriculum by setting consistently high expectations for all pupils. This requires embedding a culture where early, accurate identification and assessment of pupils' needs is prioritised, and where this information is used purposefully within a continuous cycle of planning, action and review to remove barriers and promote progress. Leaders should ensure that specialist expertise is drawn upon where necessary to strengthen support for pupils' development. Central to this is effective collaboration with pupils, parents, professionals and staff, ensuring that pupils' voices, parents' perspectives and aspirations are actively included in decisions about support, so that provision is responsive and ambitious for every learner.

Carefully sequenced units
New learning is introduced in a logical order, building on pupils' prior knowledge. This supports memory, reduces unnecessary cognitive load, and enables all pupils to develop secure understanding over time.

Clear conceptual progression
Key ideas and concepts are revisited and deepened throughout the curriculum. This ensures that pupils are not simply encountering information once, but are developing increasingly sophisticated disciplinary understanding.

Deliberate teaching of vocabulary
Academic language is explicitly introduced, explained, and revisited. Tiered vocabulary supports all pupils, including those with less linguistic confidence or pupils learning English or Welsh as an additional language, to access and communicate complex ideas.

Consistent lesson structures
A shared approach to teaching across subjects provides clarity and predictability. This supports pupils who benefit from routine, allowing them to focus their attention on learning rather than navigating unfamiliar structures.

Clear explanations and modelling
Teachers make expert thinking visible by breaking down complex ideas, demonstrating processes, and showing pupils what successful learning looks like.

Opportunities for talk and reasoning
Structured discussion allows pupils to rehearse ideas, develop disciplinary language, and refine their thinking before committing ideas to writing.

Embedded scaffolding
Tools such as sentence starters, writing frames, worked examples, and visual supports provide temporary support that enables pupils to participate successfully while developing increasing independence.

By embedding inclusion into curriculum design and classroom practice, PKC Cymru supports teachers to provide equitable access to powerful knowledge. This approach reduces barriers and enables every pupil to engage with the richness of each subject.

14. Assessment

The purpose of curriculum assessment is to inform teaching practice in order to obtain better outcomes for our pupils. It is important that we regularly use formative assessment to understand the impact of our curriculum, based on whether the pupils have learnt more, can do more and remember more. Learning has only occurred if there is permanent change in long-term memory. Assessment is the means through which we can assess whether this change has happened or not. By utilising the assessment goals, all teachers are aware of the endpoints of a lesson or unit.

Assessment should:

1. Help learners to embed and use knowledge fluently
2. Assist staff to identify clear next steps for learners
3. Provide information that can help shape development of the curriculum

Knowledge Organisers (KOs): KOs demonstrate the core knowledge that pupils will learn over the course of a unit and that they are expected to commit to memory. KOs can be shared with parents to secure better parental engagement and keep them informed of what their children are learning about. Teachers can refer to KOs at the start of every lesson to support long-term retention. Pupils should be taught how to use the knowledge organisers

for self-quizzing. Sections of the knowledge organiser can be blanked out so that pupils can retrieve core knowledge and add back in the relevant information.

Low-stakes quizzes: In our history, geography, science and art subjects, teachers can use a repertoire of assessment strategies to assess pupil knowledge. Assessments, such as low-stakes quizzes and recall questioning, help to identify gaps in pupil knowledge and support long-term retention.

Prior Learning: The purpose of the prior learning task is to activate previously encountered knowledge from the same or different discipline or subject areas. Sealy (2017) explains one key benefit of revisiting prior learning: “Each time a concept is encountered within a different context, not only is the concept more likely to be remembered, the understanding of that concept becomes more nuanced”. The prior learning section of each lesson is the link to prior learning, allowing pupils to reflect on previous learning from last lesson/last week/last term/last year etc. It also encourages the pupils to consider what previous learning they may need in order to access subsequent learning.

Written Tasks: Written tasks play a crucial role in helping teachers assess their pupils' understanding by providing a tangible and documented representation of their knowledge and skills. Dylan Wiliam emphasises the importance of formative assessment, where teachers use ongoing feedback to understand pupil progress and adjust their teaching strategies accordingly. Written assessments, such as extended writes, essays, map work, scientific diagrams or knowledge showcases, allow teachers to gauge the depth of pupils’ comprehension, whilst identifying misconceptions, and thereby tailoring their future teaching to address specific learning needs.

Book Looks and Learner Voice: These should be used in conjunction with one another as an assessment strategy to see what has been learnt over time and how the curriculum is established in pupil’s work. These should be used in conjunction as books alone are not an effective assessment tool for ascertaining what pupils have remembered long-term. When looking at books, remember to keep poor proxies for learning, such as presentation and neat handwriting, in consideration. The emphasis should be placed on the key concepts and core knowledge that pupils are remembering or forgetting.

In order to assess pupils and whether they have achieved the assessment goals, teachers will need to use a variety of assessment strategies in combination.

15. Recommended Reading

Recommended reading for curriculum leads/ SLT
• Hirsch, Jr E.D. (2016). Why Knowledge Matters: Rescuing our children from failed educational theories. Cambridge: Harvard Education Press. • Willingham, D.T., 2021. Why don't students like school?: A cognitive scientist answers questions about how the mind works and what it means for the classroom. John Wiley & Sons. • Kirschner, P.A. and Hendrick, C., 2020. How learning happens: Seminal works in educational psychology and what they mean in practice. Routledge. • Christodoulou, D. (2014). Seven myths about education. 1st ed. London: Routledge. • Brown, P., Roediger, H. and McDaniel, M. (2014) Make It Stick: The Science of Successful Learning. Harvard University Press. • Lemov, D. (2021) Teach Like a Champion 3.0: 63 Techniques that Put Students on the Path to College. John Wiley & Sons. • Sherrington, T. (2020) Rosenshine's Principles in Action. John Catt Educational. • Kennedy, M. (2016) Parsing the practice. Journal of Teacher Education, 67(1), pp.6-17. • McCrea, P. (2017) Memorable Teaching: Leveraging memory to build deep and durable learning in the classroom: 2 (High Impact Teaching) CreateSpace Independent Publishing Platform.

Bibliography

- Agarwal, P.K., Roediger, H.L., McDaniel, M.A. and McDermott, K.B. (2020) How to use retrieval practice to improve learning. *Saint Louis, MO: Washington University in St. Louis*.
- Ashbee, R. (2021). The Curriculum: Theory, Culture and Subject Specialisms London: Routledge
- Bauersfeld, H. (1979). Research related to the mathematical learning process. In I. International Commission on Mathematical (Ed.), New trends in mathematics teaching (Vol. IV, pp. 199– 213). Paris: UNESCO.
- Godfrey, D., Brown, C. and Stoll, L., 2017. Leading for innovation and evidence-informed improvement. Bloomsbury.
- Coe, R. (2015) What Makes Great Teaching? Presentation at IB World Regional Conference. Available at: https://www.ibo.org/globalassets/new-structure/conferences/2015/pdfs/robert-coe.pdf
- Coe, R., Aloisi, C., Higgins, S. and Major, L.E., 2014. What makes great teaching? review of the underpinning research.
- Counsell, C. (2018) Taking Curriculum Seriously. Available at: https://my.chartered.college/impact_article/taking-curriculum-seriously/
- Crane, B. (2001). Revolutionising school-based research. *Forum*, 43(2), 54–55.
- Department for Education (2014) Early years foundation stage (EYFS) statutory framework. DfE.
- Ericsson, A. and Pool, R., 2016. *Peak: Secrets from the new science of expertise*. Random House.
- Harris A (2004) Distributed leadership and school improvement. Leading or misleading? *Educational Management Administration and Leadership* 32(1): 11–24.
- Muller, J.Z., 2019. The tyranny of metrics. In *The Tyranny of Metrics*. Princeton University Press.
- O'Leary, M. (2020). Classroom observation, Routledge, London.
- Papay, J.P. and Kraft, M.A. (2015) Productivity returns to experience in the teacher labor market: Methodological challenges and new evidence on long-term career improvement. *Journal of Public Economics*, *130*, pp.105-119.
- Rosenshine, B., 2012. Principles of instruction: Research-based strategies that all teachers should know. American educator, 36(1), p.12.
- Rumelhart, D.E., 1978. The building blocks of cognition. *Theorical issues in reading comprehension. Hillsadale: NJ: Lawrence Erlbaum*.
- Sealy, C. (2017) The 3D Curriculum That Promotes Remembering. Available at: https://primarytimery.com/2017/10/28/the-3d-curriculum-that-promotes-remembering/

- Wood, J., Joe, J.N., Cantrell, S., Tocci, C.M., Holtzman, S.L. and Archer, J., 2014. Building Trust in Observations: A Blueprint for Improving Systems to Support Great Teaching. Policy and Practice Brief. MET Project. *Bill & Melinda Gates Foundation*.
- Young, M. (2013) p. 196 Powerful knowledge: an analytically useful concept or just a "sexy sounding term"? A response to John Beck's "Powerful knowledge, esoteric knowledge, curriculum knowledge". Cambridge Journal of Education, 43, pp. 195–198.

Disclaimer: If we have inadvertently breached any copyright on this page, please do get in contact and we will immediately rectify the issue.