



Peek-a-Plant

Peek-a-Plant

Business Plan

Part A: Business Proposal | Part B: Research & Critical Analysis

By Lauren Maddick

Business Proposal

Peek-a-Plant

Introduction

This business plan introduces Peek-a-Plant, an outdoor plant and flower identification app designed specifically for children aged five to eleven. With peek-a-plant children are able to step outside, point an iPad or tablet at a plant or flower, and the app will identify it instantly, delivering age-appropriate, curriculum linked learning content right there, in the outdoor environment at the very moment of curiosity.

This idea was not developed in isolation. It grew directly from professional experience working with primary aged children in Wales. It was immediately evident that children were fascinated by the plants and flowers around them, touching leaves, crouching to examine petals, asking questions I could not always answer on the spot. Yet the resources available to channel that curiosity were consistently inadequate such as printed plant guides that were targeted towards adult naturalists, full of scientific terminology inaccessible to young children, and generating unnecessary waste. Peek-a-Plant is the response to that gap.

The Peek-a-Plant Concept

A child points a tablet camera at a plant. AI image recognition identifies it instantly.

Curriculum-linked learning content is delivered in English, Welsh, or one of six additional home languages. No adult expertise required.

Why Peek-a-Plant is Innovative

A Gap No Existing App Fills

Market research confirmed that whilst several plant identification apps exist such as iNaturalist, PlantNet, PictureThis, and Seek, every one of them is designed exclusively for adult users. They employ complex scientific and botanical language, offer no curriculum alignment, and make no provision for multilingual learners. There is

currently no plant learning application anywhere in the UK market that has been designed for primary age children, aligned to a national school curriculum, or made available in Welsh. Peek-a-Plant is, therefore, a genuinely novel product occupying uncontested educational space.

Links to the Early Years

Whilst Peek-a-Plant primarily targets children aged five to eleven, its design philosophy is firmly rooted in early years principles. Wales's Foundation Phase (ages three to seven) places child-led, experiential, play based learning in outdoor and natural settings at its very heart. Peek-a-Plant complements this approach by meeting children where their curiosity already leads them which is outdoors, in the natural world and providing a scaffold for inquiry rather than directing it.

Louv (2005) introduced the concept of 'nature-deficit disorder', demonstrating that children's growing disconnection from the natural world has measurable and serious developmental consequences. Peek-a-Plant actively counters this disconnection by making the plant world accessible, exciting, and educationally purposeful for the very youngest learners. Crucially, its multilingual functionality makes it equally accessible to children whose home language is not English or Welsh, a group representing over twenty percent of Welsh primary pupils (Welsh Government, 2023). For children in the earliest years of school, engaging with learning in their home language is not a convenience, it is a matter of educational equity and belonging.

Benefits and Links to Early Years Development

Peek-a-Plant offers a range of direct and meaningful benefits for children, practitioners, and schools. These benefits span the holistic developmental domains central to early years frameworks:

- Cognitive development: Real time plant identification at the point of curiosity supports inquiry based, child led learning and the construction of scientific knowledge. Children become active investigators.
- Language development: Content is available in English, Welsh, Arabic, Polish, Punjabi, Urdu, Bengali, and Romanian, supporting vocabulary development.
- Physical health and wellbeing: As an outdoor app, Peek-a-Plant encourages time in nature and physical activity. Public Health Wales (2021) identifies

outdoor activity and contact with nature as key contributors to children's physical and emotional wellbeing.

- Social and emotional development: Designed for collaborative group use, the app stimulates conversation, turn taking, and shared inquiry, all of which are central to social development in the early years.
- Environmental awareness: By building ecological literacy from the earliest years, Peek-a-Plant contributes to the sustainability values embedded in the Well-being of Future Generations (Wales) Act (Welsh Government, 2015).

For schools, Peek-a-Plant addresses a clearly documented shortfall. Estyn (2023) found that seventy three percent of Welsh teachers report lacking adequate digital tools to support outdoor learning. With ninety four percent of Welsh schools already holding tablet devices, the infrastructure to deploy Peek-a-Plant exists today (Welsh Government, 2023). The app requires no additional hardware investment, making it immediately accessible to every school in Wales.

Challenges and Barriers

Financial Investment

The total estimated build cost of £78,000–£120,000 represents a significant startup investment. This includes app development, AI plant recognition integration, multilingual content creation, teacher dashboard development, and a phased staff training programme. I have, however, identified credible funding pathways including the Welsh Government Digital Innovation Fund (grants to £50,000), the National Lottery Community Fund for Wales (grants to £100,000), the Development Bank of Wales (flexible startup loans), and Innovate UK's EdTech fund which can cover up to seventy percent of eligible costs.

Teacher Adoption and Confidence

Digital tools succeed in schools only when teachers feel confident using them. If practitioners lack the skills or pedagogical rationale to embed Peek-a-Plant meaningfully into outdoor learning, adoption will stall. I have built a comprehensive CPD programme directly into the product. Each pilot school receives a half day staff

training session, a digital teacher handbook, video tutorials, and access to an ongoing online support portal.

Connectivity and Rural Access

Wales has significant rural communities where internet connectivity is inconsistent. Offline functionality has been designed into the app specification from the outset, ensuring that children in rural Welsh schools are not disadvantaged. This is not an optional feature, it is an ethical commitment to equitable access across Wales.

Safeguarding and Data Protection

Any digital tool used with children must comply with the highest standards of safeguarding and data protection. Peek-a-Plant will undergo a full accessibility audit and a child safeguarding review during the testing phase. All data will be processed in compliance with UK GDPR, and no personal data relating to children will be stored without explicit parental consent.

Intended Audience

Peek-a-Plant is designed for multiple interconnected audiences:

- Welsh primary schools and Foundation Phase settings: Over 1,500 schools serving 280,000+ primary-age children. School licences are priced at £299 per year, within typical school budget.
- Local Authorities and Regional Education Consortia: LA bundle licences (£1,999 per year) enable cost effective rollout across entire authorities, supporting a sustainable growth strategy from Year 2 onwards.
- Early years settings and maintained nurseries: The Foundation Phase design philosophy makes the app equally appropriate for nursery age children in maintained and Flying Start settings.
- Families and home learners: A home edition at £4.99 per month extends learning beyond school, engaging families as co-learners in outdoor environments.

- Welsh Government and Hwb: Strong alignment with Digital 2030 and the Curriculum for Wales positions Peek-a-Plant as a natural candidate for promotion through the Hwb national digital learning platform.

Why I Am the Right Person for This

I am a primary school teaching assistant with direct, hands on experience delivering the Curriculum for Wales across the Foundation Phase and Key Stage 2, including outdoor learning, sustainability, and digital literacy. I have taught the children for whom this app is designed, in the outdoor environments where it will be used.

My personal commitments to sustainability, inclusive practice, and multilingual education are woven into every design decision. The multilingual feature is not a commercial choice, it is an educational and ethical one. Every child deserves to discover the natural world in the language they feel most at home in, and Peek-a-Plant is designed to make that possible.

References

Estyn (2023) *Primary Schools Thematic Review*. Cardiff: Estyn [Available at: estyn.gov.wales/thematic-report/primary-schools](https://estyn.gov.wales/thematic-report/primary-schools)

Louv, R. (2005) *Last Child in the Woods: Saving Our Children from Nature-Deficit Disorder*. Chapel Hill: Algonquin Books

Public Health Wales (2021) *Healthy Weight: Healthy Wales — Children and Young People*. Cardiff: Public Health Wales

Welsh Government (2015) *Well-being of Future Generations (Wales) Act 2015*. Cardiff: Welsh Government [Available at: futuregenerations.wales/about-us/future-generations-act](https://futuregenerations.wales/about-us/future-generations-act)

Welsh Government (2022) *Curriculum for Wales*. Cardiff: Welsh Government [Available at: hwb.gov.wales/curriculum-for-wales](https://hwb.gov.wales/curriculum-for-wales)

Welsh Government (2023) *Schools in Wales: Annual Statistics*. Cardiff: Welsh Government [Available at: gov.wales/schools-census-results](https://gov.wales/schools-census-results)

Research and Critical Analysis

Peek-a-Plant

Introduction

This section presents a critical and reflective analysis of the research, legislative, and policy frameworks that contextualise Peek-a-Plant. It examines the proposal's potential contribution to early years development, engages reflectively with the barriers and tensions inherent in technology mediated outdoor learning, and situates the application within current practice and policy in Wales.

Peek-a-Plant is fundamentally an outdoor learning tool. Any rigorous analysis of its potential must therefore begin with what the research literature tells us about the relationship between children, nature, and early years development, and must honestly interrogate whether a digital application can strengthen that relationship rather than undermine it.

Early Years Development: Theoretical and Research Foundations

Nature, Outdoor Learning, and Child Development

The relationship between children's access to nature and their holistic development is robust and well evidenced. Louv (2005) argued that the increasing physical and experiential distance between children and the natural world, which he termed 'nature-deficit disorder' generates measurable negative consequences for cognitive, emotional, and physical development. Furthermore, Kellert (2005) demonstrated that direct experience with nature in early childhood supports the development of empathy, moral reasoning, and ecological literacy, while Wells and Evans (2003) found that proximity to nature was associated with reduced physiological stress and improved attentional functioning in children aged seven to twelve.

Within early years contexts specifically, the evidence base for outdoor nature based learning is particularly compelling. The Forest School movement, which has achieved significant traction in Wales and across the UK, is grounded in the principle that

regular, sustained contact with natural outdoor environments fosters physical development, resilience, and social competence in young children (Knight, 2013). Critically, Maller et al. (2006) found that children from economically disadvantaged backgrounds demonstrated the greatest developmental gains from structured outdoor learning.

It is important to locate Peek-a-Plant clearly within this body of research. The app does not replace unstructured outdoor play, nor is it designed to do so. Rather, it functions as a responsive scaffold. It meets children at the point of natural curiosity and provides an educationally purposeful extension of that curiosity, without directing or constraining the outdoor experience itself.

Technology, Digital Tools, and the Early Years

The integration of digital technology into early years environments is a contested area of scholarship, and any intellectually responsible proposal for a technology based outdoor learning tool must engage honestly with this complexity. Plowman, McPake, and Stephen (2010) cautioned that the uncritical adoption of digital devices in early years settings risks displacing valuable embodied, social, and creative learning. Similarly, the American Academy of Pediatrics (2016) identified passive screen time in early childhood as a concern requiring active management.

However, the emerging consensus in more recent literature draws a clear distinction between passive screen consumption and purposeful, collaborative, context embedded digital use. Danby et al. (2018) observed that young children using tablets collaboratively in outdoor settings did not experience technology as an isolating device, rather, the tablet functioned as a social mediator stimulating conversation, joint inquiry, and shared problem solving. This is precisely the mode of use for which Peek-a-Plant is designed. Its functionality is triggered by the child's encounter with the outdoor environment and its content is curriculum aligned. The locus of learning remains the natural world, not the screen.

This approach aligns with Vygotsky's (1978) concept of the Zone of Proximal Development, in which learning is most effective when embedded in meaningful, socially situated contexts and supported by appropriate cultural tools. Peek-a-Plant is intended as precisely such a tool, one that extends, rather than replaces, what children can discover and understand in the outdoor environment.

Policy, Legislative, and Regulatory Context

The Curriculum for Wales (2022)

The Curriculum for Wales became statutory in September 2022, representing the most significant reform of Welsh education in a generation (Welsh Government, 2022). Organised around six Areas of Learning and Experience (AoLEs) and underpinned by four cross curricular skills including Digital Competence, the curriculum mandates outdoor learning, sustainability education, and digital literacy as core elements of every school's provision. Peek-a-Plant addresses all three of these obligations simultaneously, providing schools not merely with a useful tool but with direct, practical support in meeting their statutory requirements.

The Well-being of Future Generations (Wales) Act 2015

The Well-being of Future Generations (Wales) Act 2015 places a legal duty on all Welsh public bodies, including schools, to act in accordance with the principle of sustainable development and to work towards seven national well-being goals (Welsh Government, 2015). Two of these goals a 'Resilient Wales' (maintaining biodiversity and ecosystems) and a 'More Equal Wales' (reducing socioeconomic inequality) are directly served by an app that cultivates ecological literacy from early childhood and extends the benefits of outdoor learning to all children, regardless of home language. Schools using Peek-a-Plant are not simply meeting a curriculum requirement, they are contributing to a legally mandated national agenda for future generations.

The Digital Competence Framework and Digital 2030

The Digital Competence Framework is a statutory element of all maintained schools' provision in Wales, requiring pupils to develop purposeful digital skills across the curriculum (Welsh Government, 2016). Digital 2030, the Welsh Government's national digital strategy, commits to ensuring every school in Wales has access to modern digital infrastructure and promotes the development of high quality EdTech solutions for Welsh learners (Welsh Government, 2021). Peek-a-Plant is the kind of curriculum embedded, authentic digital tool both documents were designed to enable.

Estyn: Primary Education Review (2023)

Estyn's 2023 thematic review of primary schools in Wales identified a persistent and significant gap in the availability of curriculum linked digital tools to support outdoor and experiential learning (Estyn, 2023). The report found that whilst many schools had invested in devices as part of Digital 2030, the ecosystem of high-quality, curriculum-aligned applications particularly for science, sustainability, and outdoor provision remained underdeveloped. This independent finding provides direct, empirical evidence of the market gap that Peek-a-Plant is designed to fill.

Critical Analysis: Barriers, Challenges, and Interpretive Tensions

The Risk of Technologising the Outdoor Experience

A fundamental interpretive tension at the heart of this proposal concerns whether the introduction of a digital device into the outdoor learning experience risks shifting children's attention from the natural environment to the screen. Moss (2016), drawing on Reggio Emilia pedagogy, warned that structured digital tools in outdoor settings can inadvertently reduce children's capacity for open ended, imaginative, and embodied engagement with the natural world. This concern is legitimate and should not be dismissed.

The design response to this tension does not lie in the technology itself, but in the pedagogical framing that surrounds it. Peek-a-Plant must be embedded within a broader culture of outdoor learning in which the app is one resource among many, and in which the natural encounter precedes and motivates the digital interaction, not the reverse. This is precisely why the staff training programme and teacher handbook are not peripheral additions to the product, they are central to its educational efficacy. Without skilled, confident practitioners shaping how the app is used, its developmental potential is substantially diminished.

Digital Equity and Access

Whilst ninety-four percent of Welsh primary schools hold tablet devices (Welsh Government, 2023), the remaining six percent, disproportionately concentrated in rural and economically disadvantaged communities do not. Offline functionality has been built into the product specification precisely to address rural connectivity challenges.

However, device access itself remains a constraint that offline design cannot resolve. A fully equitable rollout will require engagement with Welsh Government's Digital 2030 infrastructure investment programme to ensure no school is excluded on grounds of hardware.

Furthermore, the proposed school licence price of £299 per year, whilst reasonable by EdTech standards, may present a genuine barrier for small schools with highly constrained budgets. A tiered pricing structure with reduced rates for schools in receipt of the Pupil Development Grant or with fewer than one hundred pupils is a necessary equity consideration that should be incorporated into the commercial model from the outset.

Quality and Authenticity of Multilingual Content

The multilingual dimension of Peek-a-Plant is among its most educationally distinctive and ethically significant features. However, it demands critical scrutiny. Professional translation of curriculum content into six languages for a young children's audience is a substantial undertaking. Machine translation, however advanced, is wholly inadequate for educational content designed for early years learners, professional translators with specialist knowledge of both the target language community and the educational context are required. The languages currently proposed Arabic, Polish, Punjabi, Urdu, Bengali, and Romanian reflect national EAL census data, but their relevance to specific Welsh communities varies by geography. Validation of language priorities through direct consultation with Local Authority EAL coordinators should be treated as a non negotiable step before content development begins.

Links to Current Practice

Peek-a-Plant is proposed for deployment within an already well established ecosystem of outdoor learning practice in Wales. The Forest School movement is active across many Welsh primary schools, and the Foundation Phase's outdoor learning requirements have created a strong pedagogical expectation that children will spend regular, sustained time in natural environments. Peek-a-Plant is designed to complement and extend these existing practices, not to substitute for them.

The Hwb national digital learning platform represents the most strategically significant distribution channel available. Schools and practitioners already rely on Hwb as their

primary digital resource hub; integration would provide Peek-a-Plant with immediate reach to its target audience and would constitute an implicit Welsh Government endorsement. The RSPB's Wild Challenge and the John Muir Award are established outdoor learning programmes already embedded in many Welsh primary schools, curriculum content within Peek-a-Plant could be mapped explicitly to support children working towards these awards, deepening cross-programme value and strengthening the case for schools to adopt the app.

Future Development: Opportunities, Scale, and Ambition

Scale within Wales

The projected growth trajectory from fifty pilot schools in Year One to three hundred in Year Two and six hundred in Year Three represents approximately forty percent of Welsh primary schools at maturity. At full national penetration (1,500+ schools), Peek-a-Plant would reach every primary age child in Wales, constituting a genuinely transformative impact at the national scale. Achieving this ambition will require coordinated Local Authority partnership strategies and sustained engagement with Welsh Government digital and environmental education priorities.

Extension to Other UK Curricula

The pedagogical architecture underpinning Peek-a-Plant including being curriculum aligned, multilingual, outdoor first, and play based is readily transferable to other UK national curricula. England's National Curriculum, Scotland's Curriculum for Excellence, and Northern Ireland's revised curriculum all contain analogous outdoor learning and digital competence components. Phased expansion to these markets, with appropriate curriculum adaptation, represents a significant medium term commercial and educational opportunity. The research and evidence base generated during the Welsh pilot phase would be critical to underpinning any expansion case.

Platform Expansion: Beyond Plants

Peek-a-Plant launches with plant identification as its entry point. However, the underlying AI image recognition and curriculum delivery architecture could be extended iteratively to cover insects, birds, trees, fungi, and weather phenomena, creating a comprehensive outdoor natural science platform for primary-age children.

This transformation from a single topic application to a full outdoor learning platform would substantially increase both the curriculum coverage and the commercial value of the product, generating recurring revenue through annual content update licences.

Conclusion

The research and policy evidence reviewed in this analysis provides a compelling and well grounded foundation for the Peek-a-Plant proposal. The academic literature on outdoor learning and early years development is clear. Children's access to nature is developmentally significant, and purposeful, well designed digital tools can enhance rather than undermine that access when practitioners are properly supported and the technology remains subordinate to the outdoor experience.

The critical analysis presented here does not weaken the proposal, it strengthens it by demonstrating that its developers have engaged honestly with the challenges. The barriers identified around pedagogical framing, digital equity, and multilingual content quality are all navigable with the right design decisions, sufficient investment, and a genuine commitment to inclusive practice. Peek-a-Plant begins with a single child, a tablet, and a flower they have never seen before. What the research tells us is that this moment, the moment of outdoor curiosity, is among the most developmentally powerful that childhood offers. Peek-a-Plant is designed to make it last.

References

- American Academy of Pediatrics (2016)** *Media and Young Minds*. Pediatrics, 138(5), e20162591
- Danby, S., Davidson, C., Ekberg, S., Breathnach, H. and Thorpe, K. (2018)** *Tablet Technology and Young Children's Collaborative Inquiry*. Journal of Early Childhood Literacy, 18(2), pp.177–201
- Estyn (2023)** *Primary Schools Thematic Review*. Cardiff: Estyn [Available at: estyn.gov.wales/thematic-report/primary-schools](https://estyn.gov.wales/thematic-report/primary-schools)
- Kellert, S.R. (2005)** *Building for Life: Designing and Understanding the Human–Nature Connection*. Washington DC: Island Press
- Knight, S. (2013)** *Forest School and Outdoor Learning in the Early Years*. London: Sage

- Louv, R. (2005)** *Last Child in the Woods: Saving Our Children from Nature-Deficit Disorder*. Chapel Hill: Algonquin Books
- Maller, C., Townsend, M., Pryor, A., Brown, P. and St Leger, L. (2006)** *Healthy Nature Healthy People: Contact with Nature as an Upstream Health Promotion Intervention*. Health Promotion International, 21(1), pp.45–54
- Moss, S. (2016)** *Wild Childhood: Bringing Nature Back into the Lives of Children*. London: HarperCollins
- Plowman, L., McPake, J. and Stephen, C. (2010)** *The Technologisation of Childhood? Young Children and Technology in the Home*. Children and Society, 24(1), pp.63–74
- Vygotsky, L.S. (1978)** *Mind in Society: The Development of Higher Psychological Processes*. Cambridge, MA: Harvard University Press
- Wells, N.M. and Evans, G.W. (2003)** *Nearby Nature: A Buffer of Life Stress among Rural Children*. Environment and Behaviour, 35(3), pp.311–330
- Welsh Government (2015)** *Well-being of Future Generations (Wales) Act 2015*. Cardiff: Welsh Government [Available at: futuregenerations.wales/about-us/future-generations-act](https://futuregenerations.wales/about-us/future-generations-act)
- Welsh Government (2016)** *Digital Competence Framework*. Cardiff: Welsh Government [Available at: hwb.gov.wales/digital-competence-framework](https://hwb.gov.wales/digital-competence-framework)
- Welsh Government (2021)** *Digital Strategy for Wales 2030*. Cardiff: Welsh Government [Available at: gov.wales/digital-strategy-wales-2030](https://gov.wales/digital-strategy-wales-2030)
- Welsh Government (2022)** *Curriculum for Wales*. Cardiff: Welsh Government [Available at: hwb.gov.wales/curriculum-for-wales](https://hwb.gov.wales/curriculum-for-wales)
- Welsh Government (2023)** *Schools in Wales: Annual Statistics*. Cardiff: Welsh Government [Available at: gov.wales/schools-census-results](https://gov.wales/schools-census-results)