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Ai cover sheet

I confirm that I have not used any AI tools in the research and creation of this assignment. I confirm that I have not presented any AI generated materials as my own work. I confirm I have copies of my drafts, notes, and other resources I used, which I may be asked to provide in evidence.



(Source a : Evans,2025)

Part 2-

The photograph in Part 1 is a natural environment with many play opportunities to promote holistic learning and development. The environment provides endless opportunities for mathematical and science experiences.

A group of four children ages between two and three years old, attend the area with two practitioners, with magnifying glasses and crayons. The area has a wooded area that you need to walk through and down a little slope into an area that has stones and a river. Providing endless experiences where the children can explore in accordance with the curriculum. The children can use the natural resources, and the resources provided in the environment to extend their learning and enhancing their understanding of their surroundings and the environment.



(Source B, Evans.2025)

“Look a stone”

“Amazing, can you find another one?”

“I got one”

“Can you tell me which is big, and which one is small?”

“This one is big, this is small”

“Good job, you showed me which is big and which one is small”

Sorting stones by size helps toddlers build sensory and math skills in the Foundation Phase of the Curriculum for Wales. Grouping stones into categories like small, medium, and large fosters measuring, reasoning, and early classification abilities. This hands-on activity also encourages children to observe, compare, and make predictions with natural materials, supporting experiential and holistic development. Using their physical development by exploring the area and picking up the stones, social and creative development through their imaginative play experiences during this activity. Also, with the stones the children can throw them into the water to watch the difference in splashes and the patterns that the water makes when it lands in the water. The weight of the stones will affect the difference in splashes and the distance the stones travel, trialling different sizes will show the difference in the weight of the stones as well as the sizes. Showing the children different ways to

throw the stones and demonstrating skimming to show them how many times the stone can bounce in the water, showing how the smaller smoother stones work better than a rough bulky stone. Exploring the textures of the stones will help the children by selecting the ones that they think will work better through trial and error, making their own learning more beneficial. When it works the children will feel accomplished in what they have achieved, practitioners will also get involved with the children and join in with the fun and enjoyment of being in the outdoors learning alongside the children.

“I want a go”
“Can you find a stone that will work”
“This one?”
“Yes, let’s try”
“it’s not doing it”
“Would you like me to show you, how to di it”
“Yes,”
2025)



(Source C, Evans

By using the crayons provided as an extra resource children can explore the different patterns of the leaves. Drawing on leaves with crayons to make patterns is a sensory activity that nurtures the creativity and early mathematical thinking in young children. Drawing with crayons on leaves encourages creativity and supports early maths skills in young children. By exploring leaf shapes and textures, they learn about lines, symmetry, and repeating patterns, building a foundation for pattern recognition and spatial awareness. This activity, linked to the Curriculum for Wales, helps develop fine motor skills and introduces concepts like sequence and repetition through playful, hands-on learning linking to expressive arts in the curriculum.

Conducting a bug hunt within a woodland environment offers young children an effective means of engaging with nature while fostering foundational scientific skills. By carefully lifting stones, inspecting beneath leaves, and observing insects in motion or at rest, children are introduced to concepts such as habitat, movement, and biodiversity.

This activity aligns with the Science and Technology component of the Curriculum for Wales, promoting curiosity, systematic observation, and respectful interactions with living organisms. Through basic classification (such as distinguishing between flying and crawling insects), counting, and describing physical characteristics including colour or limb number, children develop essential enquiry and communication skills. Additionally, participation in a bug hunt encourages empathy and responsibility towards the natural world, supporting the curriculum's focus on ethical and informed citizenship.



"I found a bug"

"What bug do you think that is?"

"a granny grey"

"Oh wow, you found woodlouse, what do they feel like?"

"It feels funny, it's tickling me"

Firstly, according to hwb.gov.uk (2020), the creative process enables learners to explore more complex issues, it challenges their perceptions to identify solutions. This can lead the learners to have a better understanding of their own identity and the identity of others. secondly, through the enjoyment of expressing themselves creatively they become more confident, and this can help them by enriching the quality of their lives.

The colour changing of the leaves, introduce the children to photosynthesis and how this works in nature, the adults will be able to talk to the children about this and develop their understanding, this can also lead onto further learning when they are back in the setting and they can take part in their own research using technology to complete and become involved and taking control of their own learning and following on from their interests.

RISK BENEFIT ASSESSMENT

Location / Activity:	Woodland walk	Date:	
Assessor:		Review date:	

Experience exploring outdoor space in photograph	How will young people BENEFIT from this activity?	Hazards and associated risks	Who is at risk?	PRECAUTIONS in place to reduce the risk of injury	Overall risk after precautions RATING: L/M/H
Free play	- Exploring in nature, getting to know the environment, - walking in nature - using their senses to enhance their development - emotional and wellbeing - physical development - learning to take their own risks safely	- Loose sticks - Twigs - leaves. - Falling over - injuring themselves and others	Practitioners and children	- Walking carefully and sensibly and - listening to the practitioners when they are out. - Keeping to ratio of adult to children. - Appropriate clothing for the weather - Suitable	M

Experience exploring outdoor space in photograph	How will young people BENEFIT from this activity?	Hazards and associated risks	Who is at risk?	PRECAUTIONS in place to reduce the risk of injury	Overall risk after precautions RATING: L/M/H
Water	• Experience first-hand enjoyment of water, • throwing stones into the water • social development	• Water, • Stone • Throwing • Drowning • getting hit with a stone	Children and practitioners	• Taking care when throwing stones into the water, • not going into the water unattended. • Keeping in ratio of adult to children. • Appropriate clothing for the weather	H
Small slope	• Learning about balance • Learning about speed • Learning about gravity •	• Loose debris on the slope • Falling and injuring themselves and others	Children and practitioners	• Taking their time • Safety talk first • Being aware of the risks • Staff to child ratio	L
Walking along the pipe	• Developing their balance skills. • Assessing their own risk • Teamwork • Physical development • Exploring science	• Falling off • Injuring themselves, • Cuts • Bruises	Children and practitioners	• Taking their time • Holding onto staff's hands if necessary •	L

Experience exploring outdoor space in photograph	How will young people BENEFIT from this activity?	Hazards and associated risks	Who is at risk?	PRECAUTIONS in place to reduce the risk of injury	Overall risk after precautions RATING: L/M/H
Woodland walk	• Being in nature • Learning about the environment • Emotional and wellbeing centred •	• Falling • Dropping twigs etc off tree's • Injuries to themselves and others	Children and practitioners	• Allowing time to assess the risk • Being careful when out in nature • Staff to child ratio	L

Part 4

In this part the focus will be on the role of the adult and evaluating how the adults support the children and exploring the mathematical and science concepts in the outdoors. Focusing on how the adults create an enabling environment with loose parts and using the children's curiosity.

Adults play a vital role in fostering children's scientific and mathematical development by creating environments rich in opportunities for exploration and inquiry. By encouraging curiosity and valuing children's questions, adults help children engage in scientific thinking and problem-solving. Providing time, space, and materials for open-ended play allows children to experiment, make mistakes, and learn through trial and error (Yi-Chin Lan, ND). In mathematics, adults support development by integrating number rhymes, games, and routines like snack time or tidy-up activities that involve counting, sorting, and measuring. They also model critical thinking and problem-solving strategies, use language that promotes reflection and guide children to make connections between experiences. These intentional interactions not only extend learning but also build children's confidence and enthusiasm for exploring the world around them.

The Froebel approach creates an environment for children which are underpinned by principles such as an indoor and outdoor environment these are viewed as integral parts, where the play can flow freely without disruption. First hand experiences where children gain the knowledge and experience from doing things themselves and finding out what they need to do (Tovey, 2012). Furthermore, Bruce builds Froebel's approach and uses this to emphasise the importance of play based learning, holistic development and the importance of the supporting adult scaffolding children's learning through interactions.

Within natural environments, adults serve as facilitators, guides, and co-explorers in supporting children's learning. Rather than directing activities, adults observe attentively, respond to individual interests, and provide subtle scaffolding to promote deeper engagement with the environment. By modelling curiosity and posing open-ended questions, adults contribute to the cultivation of scientific inquiry skills. They also enhance mathematical development by highlighting patterns, shapes, sizes, and quantities present in nature, such as comparing leaf dimensions or tallying bird calls.

As noted by Bilton (2010), outdoor contexts offer multisensory experiences that foster holistic growth, and adult involvement is critical for connecting children's observations to broader concepts. Additionally, the presence of adults ensures safety while enabling children to take appropriate risks, explore autonomously, and develop resilience through experiential learning.

Storage (2019) notes that children aged 2–7 use symbolic thinking but need concrete experiences. Outdoor activities like measuring, counting, and observing help develop early math and science skills as kids ask questions and test ideas. Outdoor play provides an effective environment for children to engage with scientific and mathematical concepts, supporting Jean Piaget's theory of cognitive development. Piaget highlighted the importance of active, hands-on experiences, defined as constructivist learning, which he identified as fundamental to children's optimal learning (Piaget, 1970).

Play Scotland (ND) emphasizes that adults facilitating loose part play must exercise restraint, avoiding premature intervention. Keyte-Hartland (2022) notes that loose parts can include materials such as sticks, stones, shells, fabric, tubes, and boxes. In early childhood education, this approach supports open-ended play, allowing children to build knowledge through hands-on exploration. It is closely connected to constructivist principles articulated by Piaget and Vygotsky, highlighting autonomy, collaborative engagement, and cognitive development. Loose parts in outdoor settings foster scientific inquiry—such as investigating balance, force, or gravity—and support mathematical reasoning, including sorting, measuring, and patterning tasks. Adults contribute significantly by selecting diverse materials, monitoring children's interactions, and enriching the learning experience with intentional questioning and provocations. Daly and Beloglovsky (2015) further assert that loose parts encourage divergent thinking and empower children to take ownership of their learning.

The adult's role centres on facilitation rather than direction: they provide varied resources, observe carefully, and engage with children's ideas through purposeful questions and provocations. Adults scaffold learning by prompting reflection ("What made that tower fall?"), promoting experimentation, and connecting play to broader concepts. As Nicholson (1971) suggests, environments abundant with loose parts

promote richer educational experiences, with adults serving as curators of these settings and fostering children's confidence to explore. Therefore, all the children's developmental areas are being explored through their play and exploration not just their maths and science, whilst being enabled by the adult they are building their confidence and well-being.

However, while it is a vital role for adults to support children's explorations and learning in outdoor environments, several barriers can limit their effectiveness. One significant obstacle is a lack of confidence or insufficient training among adults. Many practitioners feel uncertain about how best to facilitate learning in outdoor settings, particularly when it comes to making explicit links between play-based activities and curriculum outcomes. In the absence of targeted professional development and support, adults may be more inclined to adopt a passive supervisory role, rather than actively engaging with and scaffolding children's learning experiences. Concerns regarding potential accidents or liability may result in excessively cautious approaches, thereby limiting children's opportunities to explore, take risks, and participate in purposeful inquiry (Knight, 2013). A focus on formal assessment and academic goals may cause educators to perceive outdoor play as secondary rather than integral to student learning, despite the strong connection with experiential and inquiry-based pedagogies. Constraints such as restricted access to natural environments, unfavourable weather conditions, or insufficient resources can render outdoor education challenging, particularly in urban or low-resource contexts. Additionally, some individuals may distinguish play from learning, thereby overlooking valuable opportunities to foster scientific and mathematical understanding through routine engagement with natural materials (Bilton, 2010).

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