



(Image 1: Source; Harris, 2024)

Part 2 (1336 words)

A Forest Adventure: Exploring Nature Through Play and Learning

Setting the Scene: On a partially cloudy day, a group of five 6–7-year-olds arrive at the forest, dressed head to toe in waterproofs and wellingtons, their eyes sparkling with anticipation. Each child enters the forest area, ready to immerse themselves in nature’s wonders. A practitioner accompanies them, holding an iPad to document their journey with photos for sharing on Seesaw. The air is filled with the sounds of chirping birds and rustling leaves, providing the perfect backdrop for a day of exploration and learning.

Activity 1: Balancing Acts Around the Campfire

As the children gather around the Unlit campfire area, they are greeted by a series of sturdy logs arranged in a circle, providing an opportunity for them to assess their balancing abilities.

The children step onto the logs, engaging in an informal experiment in physics. Through the simple act of balancing, they begin to explore key scientific concepts such as weight distribution, balance, and the force of gravity. With each movement, they make subtle adjustments to their bodies, learning how shifting their centre of mass affects stability. This activity allows them to enhance not only their muscle strength but also their spatial awareness.

“Let’s see who can cross the logs without falling!” says one child, allowing for a team challenge. One by one, the children take turns walking along the logs, the other children joining in offering encouragement.

As the children’s confidence grows, they introduce more complex variations to the task. For example, timed challenges such as “Who can cross the logs in under a minute?” which increases the level of difficulty. The addition of a time constraint not only heightens engagement but also requires the children to refine their motor skills and decision-making processes under pressure. The challenge introduces concepts of speed and coordination as they race to maintain balance while traveling across the logs.

One child asks, “Let’s see who can balance on one leg.” As they wobble, the practitioner asks questions to get the children thinking, “Why is it harder to balance on one leg?” and “It does it feel funny?” These discussions help the children understand the complexity of balance, focusing on the body’s centre of gravity and the muscle control needed to stay upright. They start to express how their bodies feel.

The practitioner then introduces an additional resource: natural walking sticks. The children are encouraged to find long sticks in the surrounding environment and explore their impact on balance. “Why does this stick help you stay steady?” the practitioner asks, leading to a discussion on the physics of stability and support. By experimenting with the sticks, the children discover that using an object helps their ability to maintain balance.

Finally, the practitioner encourages a reflection on bodily sensations, by asking the children to lift one leg and consider how their bodies feel as they attempt to balance. This activity helps them understand the role of the body's centre of gravity. Through sharing their experiences, whether feelings of stability or unsteadiness, the children develop a stronger understanding of balance, learning how their physical sensations connect to balancing.

Activity 2: Discovering Life Cycles



(Image 2: Long, 2017)

Next, the children embark on a nature scavenger hunt. They explore their surroundings, searching for signs of life such as caterpillars, bees, and even tiny sprouts peeking through the soil. The thrill of discovery fills the air.

This activity promotes physical development through movement, while also introducing concepts like animal habitats and food chains. "Let's see who can find the most interesting creature!" one child declares, and off they go, scouring the area with boundless energy. As they move, they engage in active learning, enhancing their gross motor skills while bending, climbing, and reaching.

Each child is given a magnifying glass and are encouraged by the practitioner asking "Look closer! What details can you find on this leaf?" They are intrigued by the intricate patterns and textures, discovering hidden details in the natural world. Armed with clear, vented bug catchers, the children gently capture insects. They observe the insects closely, discussing their body parts, comparing sizes and colours, which sparks an exploration of the diversity in nature.

Next, the practitioner introduces life cycle cards, displaying various stages of growth. "Can you match what you find with these images?" The children excitedly pair caterpillars with butterflies and seeds with trees, deepening their understanding of growth, transformation, and change in nature.

Their exploration continues with a focus on habitats. "Can you find an ant hill or a nest?" the practitioner asks, prompting the children to investigate how each habitat supports the life cycles of the animals living there. "Look at the ants! What are they doing?" The children observe and discuss the roles each creature plays within its environment. "On this card it says an ants' home is called a colony!" Declares one child.

Activity 3: Measuring Logs

This activity teaches measurement skills, encouraging the children to practice estimation, comparison, and basic maths operations. "Who thinks they can guess how long this log is?" the practitioner asks. Excitedly, the children make predictions before taking out measuring

tools to check their estimates. According to the Welsh Government (2020a), this supports the development of children's critical thinking skills, which is a key aspect of the four purposes outlined in the curriculum.

The children experiment with a variety of rulers and tape measures. "Which one works best for measuring a log?" Next, they use graph paper to chart their findings. For a playful twist, they also engage in creative measurement. One child asks, "How many sticks long is this log?" "This log is five sticks long! Is log number two the same?" asks another child. As a final challenge, the practitioner asks them to measure logs in pairs. "Let us measure together! How many centimetres long is this log?" Working side by side, the children align the measuring tape and hold it steady. According to Welsh Government (2020b) mathematics and numeracy education should be engaging, exciting, and accessible to all learners.

The practitioner asks, "If this log is 3 centimetres long and that one is 4 centimetres, how long are they together?" The children eagerly add the numbers. Again, using addition as part of the mathematical learning.

Activity 4: Understanding Fractions in Nature

Finally, the group explores a circle-logged area in the forest to delve into fractions.



(Image 3: Ward, 2018)

Mathematical Learning

Here, children calculate how much of the logged area remains and explore fractions by dividing the circle into sections, like a pie. Children enthusiastically gather leaves, twigs, and pebbles, ready to explore the world of fractions through firsthand experiences. The practitioner then asks the children, "Can we find 12 twigs and break them into groups?" Children eagerly sort twigs into various parts, discovering the beauty of fractions in nature. "This group has four twigs! What fraction is that?"

The practitioner encourages the children to dig into the soil, using either the provided spades or their hands. "Can you dig up a quarter of the soil to show me $\frac{1}{4}$ of the whole circle?" The children take turns digging and excitedly demonstrate their understanding of fractions.

"Can you cover half of the circle with twigs?" the practitioner asks. The children eagerly use the twigs they have collected, excited to demonstrate their understanding.

Closing the Adventure: As the day comes to an end, the children gather around the practitioner, brimming with excitement. Each child takes a turn sharing their favourite activity and what they learned. "I loved balancing on the logs!" says one child, while another shares, "I liked finding the ants and seeing their colony!" keeping in line with the Welsh Government (2020a) assessment plays a key role in

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understanding learners' needs and guiding their progress. The children leave the forest, their minds buzzing with curiosity. They have not only learned about balance, life cycles, measurement, and fractions, but they have also experienced the thrill of adventure outdoors, friendship, and the beauty of the world around them.

Part 3 - RISK BENEFIT ASSESSMENT

(947 words)

Location / Activity:	Woodland Area	Date:	28/9/24
Assessor:	Joanne Harris	Review date:	01/10/24

Your overall risk rating – Low, medium, or high – is based on your judgement about whether the BENEFITS of the activity or opportunity outweigh the RISKS.

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
Balancing on the logs around the campfire area	*Children can learn about balance and the concept of centre of gravity. Talking about how body's position affects their stability when balancing on the log. They will experiment that a lower centre of gravity (by bending knees) makes them more stable.	Children may lose their balance and fall off the log, potentially leading to minor or even serious injuries. (Break, sprains etc).	Children and adults.	* Ensure logs are not slippery. Avoid logs with moss, wet surfaces, or other factors that can reduce friction. * Use logs that are close to the ground to reduce the risk of injury from falls. * Encourage children to wear appropriate footwear with good grip (e.g. Trainers). * Supervise children closely, especially when they are balancing at higher levels or on narrower logs.	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
Discovering and discussing the things we can see. (I.e. Leaves, rocks, minibeasts.)	* Engaging with the natural environment encourages children to ask questions and make observations. * Being in nature stimulates all senses, sight, sound, touch, and smell. * This activity supports direct, firsthand learning in science such as biology, ecology, and earth sciences. Children gain practical experience with concepts like life cycles, ecosystems, and food chains.	* Uneven terrain, rocks, tree roots, and fallen branches can cause children to trip, slip, or fall, resulting in scrapes, bruises, or sprains. * Woodland areas are home to insects such as bees, wasps, ticks, and spiders. Children may be stung or bitten, which can cause allergic reactions or discomfort. * Sharp rocks, branches, or discarded human debris (e.g., broken glass, litter) can cause cuts or injuries.	Children and adults.	* Encourage children to walk carefully and remain aware of their surroundings. * Ensure appropriate footwear (e.g. Trainers) are worn. * Supervise children closely, especially in areas with difficult terrain. * Advise children not to touch insects or disturb nests. * Ensure children wear long sleeves and trousers to minimise exposure to insects. * Inspect the area before the activity, for any dangerous objects and remove them. * Advise children to avoid handling sharp or unknown objects and wear gloves if handling natural materials like rocks. * First aid box to be provided at the site.	L/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
Children estimate the length of logs. Afterward, to measure and compare their estimates with actual measurements.	* Problem-solving, critical thinking, estimation, measurement concepts. Learning to estimate accurately and then compare their guesses with real measurements helps them refine this ability. Understanding mathematical language. * Fine and gross motor skill development. using measuring tools and learning how to interpret the results, reinforcing their understanding of length and spatial awareness. * Children learn the importance of standardised units (centimetres, meters, etc.) when measuring objects. This knowledge is foundational for future work in scientific fields like physics, chemistry, and biology, where accurate measurements are key.	* Children may trip over logs, branches, or uneven ground while moving around to measure or observe the logs. * If the logs are wet, mossy, or covered in leaves, they can become slippery, increasing the risk of falls. * Using tools like measuring tapes, rulers, or sticks improperly can result in minor injuries such as cuts, pinched fingers, or being struck by a retracting tape measure. * Outdoor logs and surfaces can carry dirt, bacteria, or animal droppings that might pose a hygiene risk if children touch their faces or mouths after handling logs.	Children and adults.	* Ensure children are aware of their surroundings and clear the area of obstacles. Adult to supervise and guide them through safe pathways. Encourage children to walk slowly and pay attention to where they step. * Check the condition of the logs beforehand and avoid using logs that are too slippery. Advise children to wear appropriate footwear with good grip. * Teach children how to safely use measuring tools, such as how to handle tape measures and rulers correctly. Supervise the use of tools and only use soft measuring tapes for this year group. * Encourage hand washing or use of hand sanitiser before and after the activity. Remind children not to put their hands in their mouths or touch their faces during the activity.	L/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
The circular and semi-circular logs can be used to discuss fractions. For example, talk about how the logs represent half a circle or how dividing the space inside the circle can represent different fractions (e.g., dividing into halves or quarters).	*Children will gain a concrete, visual understanding of fractions by seeing the logs divided into sections. The logs provide a physical representation of how shapes (in this case, circles) can be divided into parts like halves, quarters, or other fractions. * Arranging and dividing circular logs enhances children's spatial awareness and ability to manipulate shapes and objects in space, an important skill for both math and science. * The activity encourages the use of mathematical vocabulary, such as "fraction," "half," "quarter," "whole," "circle," "diameter," and "radius."	* If the logs are not properly sanded or finished, they could have sharp edges that might cause cuts or splinters. * If logs are not treated or preserved properly, they might attract pests or become mouldy, which could be a health risk. * Weather risk, if it is not shaded in this area and sunny may pose a risk of sunburn.	Adults and Children.	* Ensure logs are smooth and free of sharp edges. * Ensure logs are appropriate-sized logs that are manageable and ensure they are stable when used in activities. * Provide clear instructions and supervision to prevent misuse. *Keep logs clean and well-maintained to avoid environmental issues. * Ensure appropriate clothing such as sun hats and sunscreen are worn.	M

Part 4 – The role of the adult.

(1808 words)

The Welsh Government (2024) explains that when children encounter maths and science problems, they often do not know the solution immediately. In these situations, they need creativity and support to try different approaches. Practitioners can assist by planning tasks that help children transform their ideas into concrete actions. Whalley (2021) emphasises that adults should be flexible and attentive during children's play, adjusting their involvement to meet each child's unique needs. This means sometimes stepping back to let children lead or stepping in to provide guidance when necessary. Waite-Stupiansky and Cohen (2020) emphasise the need for gradual support, especially during structured tasks like engineering, where practitioners guide children from the initial idea to practical testing.

The Welsh Government (2022) reinforces this by stressing that learners should be at the centre of the assessment process, with assessment integrated seamlessly into teaching so that children actively engage without being aware of it. Practitioners should also play alongside children, introduce new ideas, and create outdoor spaces that reflect children's interests, providing open-ended play materials. Additionally, Tucker (2014) highlights the value of encouraging children to reflect on and share their play experiences, as this helps them articulate their learning and connect new ideas with previous knowledge. Waller (2011) state that practitioners should actively teach children about nature and caring for the environment. Similarly, the Early Years Foundation Stage guidance highlights the importance of educating children to manage litter, protect plants and wildlife, and respect others' use of outdoor spaces (Department for Education, 2023).

Ryder Richardson (2013) adds that practitioners should be confident, knowledgeable, and enthusiastic about outdoor learning, encouraging children to take risks, dress appropriately for the weather, and integrate the outdoor environment into their planning. Rosenow (2024) also points out that before asking children to protect the environment, we must first teach them to love it by creating positive nature experiences in schools and childcare settings by being encouraging and enthusiastic. Additionally, there is a need to help

teachers and parents, who grew up with technology, learn to promote these connections for the benefit of both the children and themselves. Go play Sandwell (2021) highlight that loose parts are valuable because they are open ended, allowing children to use them in any way they like. This flexibility supports a wide range of interests and activities which gives practitioner opportunities to identify emerging skills and any interests.

Robertson (2017) emphasises the importance of giving children time to explore loose parts, which assists mathematical learning. As children engage with these materials, adults can observe emerging skills like sorting or comparing and offer guidance when needed. Alexia (2020) agrees that, while adults may not be involved in every activity or planning, their role in preparing the environment and offering resources is essential for encouraging children's independence. Pacey (2019) adds that practitioners should provide open-ended resources and create spaces where children can experiment and explore independently. Instead of directing play, practitioners support learning by encouraging firsthand exploration, allowing children to follow their curiosity and develop critical thinking skills through loose parts play.

Mathias (2019) supports Vygotsky's idea that children's learning through play is heavily influenced by their interactions with both their environment and other people, rather than just playing alone. The Zone of Proximal Development highlights the skills children can learn with some help, while scaffolding offers the support necessary to develop those skills. For instance, when children engage in outdoor play with natural materials, practitioners can provide guidance and demonstrate techniques to help them take on tasks that are slightly beyond their current abilities. According to Heart Mind online (2015) we can determine practitioners need to offer support that encourages children to think more deeply without controlling their play. By asking open-ended questions, they can guide children from what they already know to new ideas, helping them learn and develop further. Gray and MacBlain (2015) state that as children improve at these tasks, the support they receive gradually decreases, promoting their ability to learn independently. Practitioners can effectively promote this independent learning through open-ended play and exploration, allowing children to build on their existing skills and knowledge.

Boulton and Thomas (2022) illustrate how outdoor play presents children with diverse opportunities to interact with their surroundings, which aids in the development and refinement of their cognitive schemas. The Froebel Trust (n.d.) emphasises that practitioners should encourage children to identify and create patterns using natural materials such as, arranging leaves in sequences or constructing geometric shapes with sticks. This approach reinforces both mathematical and scientific understanding. It aligns with Piaget's theory, as described by Gray and MacBlain (2015), where new information is processed by integrating it into existing schemas or modifying schemas to accommodate new knowledge. Piaget's theory of loose parts play allows children to continually assess their understanding of the world through interactions with open ended materials, helping them adapt their thinking and critical thinking skills.

Gano (2019) explains that children learn through their senses (seeing, tasting, touching, hearing, and smelling). These sensory experiences play a key role in brain development. Repetitive actions in schematic play further enhance cognitive abilities by reinforcing familiar concepts through new experiences. This process is strengthened by firsthand exploration and active investigation. Waller (2011) adds that enthusiastic adults play a crucial role in displaying a positive attitude towards outdoor environments, helping children develop lifelong habits and an appreciation for nature.

Similarly, the Welsh Government (2024) highlights the importance of making maths lessons fun, engaging, and easy to understand to build children's confidence and resilience when tackling challenges. The Department for Education (2023) emphasises that practitioners should use open-ended questions to stimulate children's thinking and curiosity, encouraging creative problem-solving. These questions help children explore their own ideas rather than focusing on right or wrong answers.

Ryder Richardson (2013) highlights the importance of professional development in outdoor learning, suggesting that staff can enhance their teaching skills particularly in maths, by collaborating with colleagues and visiting other outdoor settings. However, Tucker (2014) cautions that while child-led play is valuable, it may not be sufficient on its own for consistent progress in maths. Therefore, practitioners must balance independent play with targeted teaching to ensure a deeper and more comprehensive understanding.

The Welsh Government (2020) suggests that connecting learning to real-life experiences, like exploring nature through outdoor activities, can help make abstract concepts like measurement easier for children to understand. Practitioners play a key role by providing feedback that helps children identify gaps in their understanding and make improvements. The Froebel Trust (2023) supports this, noting that outdoor environments allow children to explore concepts such as gravity, motion, light, and sound, which reinforces their learning while deepening their connection with nature.

White (2016) highlights the importance of providing movement opportunities to support children's well-being. Similarly, the Department for Education (2023) highlights the value of allowing children to move freely and enjoyably, whether they are navigating spaces or using equipment such as balls and climbing frames. Homen (2018) adds that outdoor play areas are particularly beneficial for children with sensory sensitivities, helping them explore their senses while improving motor skills, balance, and body awareness. White (2016) also points out that sensory and physical experiences are essential for children's thinking and learning, as physical activity gives the brain the tools needed for learning and memory, making movement key for cognitive development.

Additionally, the Department for Education (n.d.) explains that movement helps children understand mathematical concepts such as, length, height, and distance. For example, pacing out lengths teaches measurement, while climbing helps estimate height. Through such physical activities, children also experience forces like gravity and friction, enhancing their ability to explore, predict, and understand how their bodies interact with the world, linking to science learning.

Teach Early Years (2024) highlights the importance of using metacognitive talk to help children reflect on what they have learned. This approach is supported by the Welsh Government (2022), which emphasises that effective communication among practitioners, learners, and parents is essential for promoting progress and well-being. However, Teach Early Years (2024) also notes that time constraints make it challenging for practitioners to engage in these conversations and understand each child's learning process. Supporting children in developing a deep understanding of themselves as learners is a key responsibility for practitioners.

The Smithsonian Science Education Centre (2015) suggests that practitioners should ask guiding questions when children are unsure, encouraging them to connect what they already know with new information. By prompting children to explain their understanding and reflect on their progress, practitioners can enhance metacognitive awareness through conversation. Waite (2011) advises that practitioners should limit direct teaching and avoid excessive supervision to strike a balance between ensuring safety and allowing children the freedom to explore.

White (2019) emphasises that practitioners are key in managing safety during outdoor play, continuously assessing, and adjusting risks while guiding children in handling these risks responsibly. However, Stan and Humberstone (2011) observe that fears of legal liability can lead practitioners to restrict enriching outdoor experiences that are vital for children's development. Froebel Trust (n.d.) supports this by noting that practitioners can help children assess and manage risks by demonstrating safe practices, such as assessing the stability of a tree branch before putting weight on it.

This approach not only teaches children to evaluate their own safety but also promotes informed decision-making. Waite (2011) further reinforces this idea, emphasising that children need ample, uninterrupted outdoor time to explore, develop their understanding, and face challenges. This suggests that flexible routines are more effective, allowing for deeper engagement in outdoor activities and enhancing the learning experience. Ernst and Tornabene (2012) point out that practitioners' views on outdoor settings and their willingness to use these environments are influenced by their personal preferences and experiences with nature. Waller (2011) adds that both parents and practitioners are key in determining the amount of time children spend outdoors, as personal concerns such as safety can affect access to these spaces.

In conclusion, the role of the adult in children's outdoor learning is essential for promoting development. Practitioners must be adaptable, balancing guidance with the freedom for independent exploration. By integrating assessment into daily activities, adults can enhance engagement and in still a love for nature and environmental care.

Encouraging open-ended play with resources such as loose parts promote creativity and cognitive growth, while teaching children to assess and manage risks is key for their safety and decision-making skills. Ongoing professional development is also key for practitioners to maximize the benefits of outdoor learning. As children engage with their surroundings, the scaffolding provided by adults aligns with effective educational practices, promoting self-discovery and a deeper understanding of complex concepts in mathematics and science.

By recognising and enhancing the adult's role, meaningful learning experiences can be created that support children's growth and nurture a generation that values and protects the environment. Advocating for policies that prioritise outdoor education is key to ensuring all children have access to these valuable experiences.

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