

Part 1 Photographs



Williams (2026)

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Part 2

The photograph I have chosen is of a group of 10 children aged between 4 and 6 years old in an outdoor environment that provides children with a natural and stimulating setting where they can learn about the outdoors through play and exploration. There is a range of trees, plants, and grass, which gives children an opportunity to observe living things and have an understanding of how they grow and change throughout the different times of year. Outdoor learning is a valuable learning experience for children because it allows them to explore within their own experiences. It gives children opportunities to be active, explore and learn through play, while making their own choices, which will help them to develop independence and confidence.

The resources I took to the setting included teddy bears, colour match cards, a bug sheet, magnifying glasses and guttering, which were placed around the environment. This allowed the children to become involved in child-led learning rather than the practitioner choosing what they explore first. This meant that they learned from first-hand experiences instead of being told what to do or what would happen.



The children were allowed to explore and ran around to see what was around the outdoor area. One child noticed a slight slope in the grass and ran down it, shouting to his other friends, 'Look, there is a hill, come and run down it with me,' which then a few other children all ran over to the same spot and took it in turns to run down the slope, with one child saying, 'The hill makes me run super-fast'. After all the children had a few turns running up and down the slope, I then said to the small group "I wonder if you will run fast when you go up the hill or when you run down the hill" you could see the children all thinking and one of the older children saying "we can watch each other while we take turns" I tuned to the child and said "that's a really good idea, how are you going to know?" he then looked at his friend and was thinking when his friend said "I know!" We could count," I replied, saying, "Yes! Well done, give it a go".

Welsh Government (2026), This experience can be linked to the Mathematics and Numeracy Area of Learning and Experience, as it states that children can experience

and explore numbers in an outdoor environment. Running up and down the slope, the children are naturally developing an understanding of comparison, measurement, distance and speed. They could compare who travelled the furthest and who reached the bottom first. The practitioners can also extend this learning by encouraging the children to count their steps and measure the distance of the slope.

Another group of children were exploring inside the tree den when one child mentioned, "This looks like the cave in We Are Going on a Bear Hunt" A few other children agreed, and then they began singing the song, saying, "We can't go over it, we can't go under it, oh no! We have to go through it" The children then got the magnifying glasses and then were all marching in and out of the den, pretending they were on a bear hunt and looking through the magnifying glasses to see what they could find.

As the children explored the den, they began talking about the size and what they could see. One child was looking through the magnifying glass at the leaves and said, "Wow! This leaf has loads of different patterns," while another child was looking at the floor and then moved a small rock and said, "Look, there is a woodlouse." We then spoke about the woodlouse, and I asked them, "Why do you think the woodlouse was hiding underneath the rock?" One child said, "Because it's dark under there". I



then asked them, "Do you think it likes being in the dark or in the sunlight?" The children then were talking back and forth to each other, sharing their ideas. I encouraged the children to carefully observe the woodlouse using the magnifying glasses and asked, "How many legs can you see?" and "What do you notice about its body?" This then helped the children to develop their observation and counting skills, and then we discussed living things in their natural environment. As the children continued exploring the den, they began to notice other things around them, including the light coming through the leaves.

This experience links closely to the Science and Technology Area of Learning and Experience as the children developed an understanding of living things and the

environment around them (Welsh Government, 2026). They observed the woodlouse, counting their legs and discussed where they lived, and this was the children using their senses to explore and learn about the world around them through first-hand experience.

One child said, "It's really dark in here", while another child replied, "I can see light coming through this part of the gaps in the leaves". I then joined in, asking, "Why do you think it is darker inside the den than outside the den?" One child replied, saying, "Because it has big leaves hiding the sun" I then discussed with the children light, dark, shade and sunlight. I also encouraged more mathematical thinking by asking, "How many children do you think can fit inside the den?" They all got excited and started shouting out different numbers. One child then called over all the other children to see if they could all fit inside. This allowed them to explore mathematical ideas such as counting and space through play.

The children continued to explore the light from inside the den. I asked them, "What do you think will happen if some of the leaves are moved?" The children went to move some of the leaves and noticed that more light then came through the gaps. We all then had a discussion about how leaves created shade and stopped some sunlight. This allowed the children to make predictions and test their ideas, talking about what they had observed. Through this hands-on experience, they were developing their early understanding of science.

A small group of children were playing with the guttering, small balls and water. As I was walking over, I could see them lifting it and then putting it back down. When I got there, they were talking to each other, saying, "Now you lift your side, and I'll move down", and then continued to do this. They then said to me, "We are trying to make the water go fast" Then they realised if they had the guttering on the slope on the floor, they wouldn't have to stand holding it, and then water would go down the guttering without needing to lift it.

I then asked them, "Have you tried getting the ball back up the hill?" They both were looking and then tried rolling it, but it did not make it all the way up to the top. Then they tried blowing it, but they got tired before it got to the top of the guttering. They then asked what they could try, and another child heard them and said, "I did this

with my dad; try using water”, and they then began throwing water up with the ball, and it made it to the top. When the children were experimenting with the guttering.

As the children were experimenting with the guttering and water, I then introduced some simple scientific words such as movement, speed, gravity and direction. The children explored how changing the height of the guttering affected the movement of the ball and the water. They tested out different ideas and observed the results; this helped their problem-solving skills and investigation, while using mathematical words such as higher, lower, slower and faster.

Part 3

Experience exploring outdoor space in photographs	How will young people benefit from this activity	Hazard and associated risks	Who is at risk?	Precautions in place to reduce the risk of injury	Overall risk after precautions rating L/M/H
Weather	Children will be able to learn about different types of weather by observing and exploring the outdoor environment. Children can also explore how different types of weather can change the outdoor environment and this will help them develop their observation skills and support their early understanding of science.	Hazards and risks could include the ground becoming wet and slippery which could cause the children or practitioners to slip or fall. Heavy rain could reduce visibility. Sunny and hot weather could make the setting unsafe due to it being too hot.	Everyone .	The practitioner could ensure they check the weather forecast regularly before the activity and monitor the weather. The practitioners could also ensure the children wear suitable clothing and footwear for the weather. If the weather becomes unsafe, the activity should be stopped, and everyone should return indoors.	Medium.
Low branches	When children explore outdoors, it makes them aware of the natural environment by learning to be observant of their surroundings. Children can learn	Children could run into the low branches and bump their head, or they could trip	The children	The practitioners could check the outdoor environment before beginning the activity. Remind children to walk around the branches in	Medium.

	about the trees, leaves and low branches while also learning to be more observant and careful around low branches.	over the low branches.		case they trip or run into a branch. If strong winds happen, stop the activity.	
High winds	By being outside in high winds, children can develop a better understanding of the weather and how high winds affect the outdoor environment; they can then observe the trees and leaves moving around them.	High winds could make branches become loose or fall, which could then fall and injure the children or practitioners. The children could lose their balance. Children may become cold or uncomfortable if they are outside in strong winds.	Everyone	The practitioner can ensure they check the weather forecast frequently and, before allowing the children at the setting to go outside, check the outdoor area for any unstable branches or hazards. If there are any loose branches, ensure the children stay away from them; if the weather becomes worse, end the activity and return inside.	High.
Children wondering off	With children being in an outdoor environment, it allows the children to develop their independence and confidence for them to explore within boundaries. The children can learn to follow instructions and to have an	Hazards and risks could include a child getting separated from the group or becoming lost. The child may	The children	The practitioners need to set clear boundaries for the children and explain that they must stay within the boundaries and within the group. Practitioners need to ensure there are other	Medium.

	understanding of staying in the group. Benefits could also include the children practising their communication and social skills as they will be working together and communicating.	enter an unsafe area and could trip or fall, and the practitioner wouldn't see.		practitioners around the environment to monitor all the children.	
Slope or uneven ground	When children are in an outdoor environment where there are slopes or uneven ground, the children can develop their walking, running and moving skills by learning to move carefully over the different surfaces. The children can explore the uneven ground, which can support their balance and coordination.	Hazards and risks could include the children tripping, falling or twisting their ankle on the uneven ground. The grounds could get wet and muddy, making the floor more slippery.	The children	The practitioners need to ensure the area is checked for uneven surfaces and monitor the area if there are larger uneven areas. Before allowing the children to explore the environment, remind them there could be uneven ground and slopes, and to ensure they walk on the uneven ground. If the area becomes too wet or slippery, then they need to avoid it.	Medium.

Part 4

This section discusses the role of adults in supporting children's learning during outdoor experiences. Adults have an important role in creating a safe, stimulating, and supportive environment where children can explore, investigate and develop their understanding through play and first-hand experiences. Adults can support and encourage children's learning in mathematics and numeracy, and Science and Technology, by asking questions, introducing new vocabulary, and encouraging children to make observations. It will also be explored how theories such as Bruner's theory of discovery learning and scaffolding can support children's development of mathematical and scientific knowledge through outdoor experiences. It will also refer to the Curriculum for Wales, with a focus on Mathematics and Numeracy and Science and Technology Areas of Learning and Experience. By the practitioners providing appropriate resources and allowing children to take the lead in their learning, adults can help children develop their curiosity, confidence and understanding of the world around them.

Firstly, the role of the adult in outdoor learning will be discussed. As Whalley (no date) notes, it is the practitioner's responsibility for play to happen, to adapt the setting or environment to meet the needs of every child, and to ensure the resources are provided. Whalley (no date) also emphasises that it is the practitioner's responsibility to provide high-quality play; this could include children playing with each other, with themselves, or with the practitioner getting involved and extending the children's learning.

Williams (2026) mentions that play plays a crucial role in a child's learning and that the practitioner plays a vital role by enhancing the quality of outdoor play the children receive. He believes that the attitude the practitioner has towards outdoor play has an impact on what the children do outdoors and says it is important for the practitioner to be enthusiastic about learning outdoors to have a positive effect on the children.

Practitioners must allow the children to make their own choices with what they play with, as it allows the children to learn independence, decision-making skills, problem-solving and confidence skills; it enables the child to explore the play space and the resources provided. It also allows the child to build their social development as they

interact with the other children. Estyn (2023) suggests that giving children the freedom to choose their activities and providing a variety of resources can help to develop independence and confidence. Allowing children to take the lead in their play also helps create opportunities for the children to engage with the other children.

Although practitioners must allow children to lead their play and have a choice, the practitioners are still required to observe the children's interests and recognise opportunities to extend their learning. Estyn (2025) highlights the importance of practitioners using observation to recognise children's interests and provide suitable support to extend their learning. This enables practitioners to plan activities that the children have interest in. For example, during the outdoor session, a child found a woodlouse underneath a rock and showed their interest in looking closer at the bug; the practitioner then extended the learning by asking questions such as "How many legs can you see?". Estyn (2025) also emphasises the importance of questioning in play to help extend their children's learning.

As Tomkinson (no date) notes, Bruner believed that children learn and build knowledge more effectively through hands-on experiences and discovery learning instead of just receiving information from an adult. His theory of discovery learning suggests children develop knowledge by exploring new experiences and linking them to what they already understand. He also recognised the importance of the practitioner's role in supporting the children's learning through scaffolding. Scaffolding involves the practitioner providing appropriate guidance and support when needed; this will help build the child's confidence, understanding and independence. The level of support should be appropriate to each child, with the practitioner gradually reducing the support as the child becomes more confident and capable of completing the task independently. This can be particularly beneficial in outdoor learning, where children can explore their surroundings and develop their knowledge through practical experiences.

This can also be linked to Carbon's (2013) *The Wisdom of Nature: Out My Back Door*, which explains how children develop their knowledge by making discoveries in the outdoor environment. Carbon (2013) note that children can learn by using their senses and having the opportunity to explore and investigate the natural

environment independently. Children can build on these experiences by what they already know and develop their understanding. This links closely with Bruner's theory of discovery learning, as he believes children are actively involved in exploring and making sense of their experiences rather than being told information by the practitioner.

Practitioners can scaffold children's thinking and learning by asking questions rather than giving the children the answer, for example, "What do you think will happen if we make the gutter higher?" This is the practitioner supporting the children by extending their learning and also supporting the children's investigation skills and problem-solving.

Scaffolding looks different with every child, and every child will need a different level of support; some children may be able to explore independently, where other may need additional support. Scaffolding is not about the practitioner stepping in and taking over; it is the practitioner finding the right balance, as too little support could cause the children to struggle to develop their ideas, and too much support from the practitioner and it could mean the practitioner is taking over, which reduces the child's opportunity for them to build their independence skills. Then there is effective scaffolding, which is the practitioner providing the correct amount of support to help extend the child's learning while also allowing the child to have responsibility.

The outdoor environment provides children with several opportunities to explore mathematical and scientific concepts through real-life experiences, as children can learn through touching, moving, observing and investigating their outdoor environment. The Woodland Trust Scotland (2009) Outdoor Learning Pack also supports this by providing examples of how children can develop scientific and mathematical understanding through outdoor play; for example, children can measure distance by counting steps and explore forces and movement outdoors, and these experiences support the children's development and understanding rather than being told the information by practitioners.

Piaget's theory highlights that children develop their understanding through direct experiences with the outdoor environment. The Education Hub (2021) discusses that, with children having hands-on experience, it allows them to explore and develop their thinking skills. This is especially relevant as outdoor learning can help

support the children's mathematical understanding with practical activities. Outdoor experiences also support children's opportunities to experiment and test their own ideas, which supports their scientific understanding.

Practitioners can support mathematical and scientific learning outdoors every day through different activities. Practitioners can teach children how to measure while using different natural materials, such as sticks, stones or pinecones. Practitioners can also encourage the children to look for patterns in the environment around them, such as patterns on sticks, leaves or trees. These activities can support children's mathematical and scientific skills while also promoting positive feelings toward the nature and encouraging exploration (Natural Resources Wales, 2025). By the practitioners providing a range of resources it can help encourage the children to explore scientific and mathematical concepts through their interests. Children should be given opportunities to solve problems independently without too much guidance from the practitioner; the practitioner can support the child when needed, allowing the child to develop independence while still having support if needed.

There are several ways practitioners can support children's learning outdoors, and one of them is by asking open-ended questions, as this encourages children to think and explore ideas. Open-ended questions help develop children's thinking and reasoning and develop communication as they will explore and explain their ideas. When practitioners use open-ended questions, it also helps build the children's confidence and independence, as the child can come up with their own ideas instead of the practitioner providing the answer.

Practitioners can help develop the children's vocabulary by introducing mathematical and scientific words naturally while the children are exploring, which will encourage children to use them when explaining ideas. This could include using words such as bigger, smaller, more, less, higher and for science words such as living, investigate, movement and force could be brought in.

Natural and open-ended resources can give the children opportunities to explore and develop their understanding. Open-ended play helps children to follow their own interests and use their imagination without the practitioner telling the child what will happen. Waltham Forest (no date) believes that children need the time and space to explore in their own time and following their own interests. Open-ended play helps

the children to experiment and use their imagination; for example, if the practitioner provides the children with some rope, teddies, and stones, each child may think of something different to do with the resources. This type of play helps to provide enjoyable learning while developing their understanding.

Waltham Forest (no date) continues to mention that the role of the adult in open-ended play involves the practitioner providing the right resources for the children and knowing when to step back and allow the children to take control of their play.

Children still need adult supervision, but the practitioner needs to allow the children time and space to explore, experiment and solve problems independently, and then the practitioner can step in when support is needed.

Conclusion

To conclude, practitioners have an important role to play, supporting and encouraging children's mathematical and scientific learning through outdoor play. Practitioners need to ensure they provide a safe environment with the correct resources to allow the children to explore and investigate, where they can follow their own interests instead of the practitioners telling them what to play with. For children to develop their independence, they need to experience opportunities to make their own choices and solve problems. Bruner's theory of discovery learning and scaffolding, along with Piaget's theory of learning through direct experiences, highlights the importance of children being involved in their learning and having hands-on experiences. Scientific and mathematical learning can be encouraged every day with outdoor activities, open-ended questions and introducing basic vocabulary. Overall, outdoor learning includes the practitioner finding the balance between providing support which extends the children's learning and allowing the children independence to explore.

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