

Portfolio

Part 1



(Source: Beautiful England Photos, No Date)

Part 2

Feature 1

The uneven ground and sloping terrain in this location provides many opportunities for children to develop their understanding of science and mathematical concepts. For example, walking and running on uneven ground encourages the development of the vestibular sense (sense of balance as explained by Pathways, 2022a) and the proprioception sense (the awareness of your body in the environment as explained by Pathways, 2022b). Children having to move on uneven and sloping ground will allow them to feel the effects of scientific concepts such as gravity and forces on their bodies (Welsh Government, 2020a). Feeling these effects will encourage them to learn how to strengthen their vestibular senses so that they stay upright and well-balanced on differing terrain. Therefore, providing children with access to areas with uneven ground such as the woodland in the photograph, allows them to build the foundations to understanding the world around them (Welsh Government, 2020a).

Furthermore, adults can add resources to the environment and use the uneven ground to experiment with loose parts. For example, they can bring balls or marbles to roll down the slopes and even small toy cars to race. Rolling items down the slopes will strengthen the children's understanding of gravity, energy and forces (Welsh Government, 2020a). Racing small toy cars will provide the opportunity for learning of similar science concepts but will also provide children with the opportunity to understand the mathematical concepts of number familiarity, counting and positions such as first, second and third (Welsh Government, 2020b).

Further to this, walking and running on uneven ground presents an element of risk to children. This is because they are prone to trips and fall resulting in cuts, scrapes, sprains and other injury. However, children can develop their understanding of mathematical concepts from stepping forwards and backwards, counting their steps and understanding the concept of distances (Welsh Government, 2020b). The British Association of Early Childhood Education (2022) states that children should be encouraged to engage in risky activities as it helps build their self-esteem, confidence and resilience. Therefore, engaging in risky activities and play such as moving on uneven ground also has a positive impact on children's health and wellbeing (Welsh Government, 2020c).

Feature 2

The presence of trees in the woodland also encourages children to learn about different science and mathematical concepts outlined in the new Curriculum for Wales by Welsh Government (2022). For example, children can climb the trees, which will allow them to develop their understanding of heights and sizes such as big and small, tall, or wide. Furthermore, children will be gaining understanding of distances and estimating as they need to reach and decide which branch to hold on to next (Welsh Government, 2020b).

Children can also look at the length and size of branches and twigs that have fallen from the trees and use them to build structures such as dens. By doing this, they are developing their understanding of mathematical spaces, area and heights. As well as this, children can also begin to estimate and compare natural objects and loose parts. For example, they may begin to use terms such as 'shorter or longer than' and 'heavier or lighter than'. This is supported by the aims of learning progress in the statements of what matters by Welsh Government (2020b).

Furthermore, children may ask questions such as "how did the branches from that tree fall on the floor?" or "does that mean I would fall if I let go of the tree?". By looking at the environment around them and being curious about why things may happen in this way, children are deepening their knowledge of science concepts such as gravity, movement and energy (Welsh Government, 2020a).

In addition to tree climbing, children can also be supported to explore the habitat a tree provides for living things and their life cycles including insects, birds, and plants. For example, adults can add resources to the environment such as magnifying glasses and small ventilated containers so that children can really explore and be curious about the natural world around them. Children can expand their knowledge through curiosity, and this also teaches them to have compassion for other living things that live in the natural world (Welsh Government, 2020a). This is supported by the words of Froebel, who said 'The child who has cared for another living thing... is more easily led to care for his own life.', (Tovey, 2022, p. 8).

Feature 3

The stream in the photograph can provide children with the opportunities to explore many science and mathematical concepts. For example, children can play in the water and learn about its properties. This will benefit their sensory development, but also the children can drop pebbles and stones into the water to understand that the bigger and heavier they get (Welsh Government, 2020b), the bigger the splash is in the water. In addition to this, dropping the pebbles will also teach them further about the concept of gravity (Welsh Government, 2020a).

Furthermore, the stream can provide children with the opportunities to learn about the plant life and animal habitats that reside there. Children can use magnifying glasses to explore the stream and widen their knowledge of the conditions and systems need to allow life cycles to develop (Welsh Government, 2020a).

In addition to this, varying weather conditions may have different effects on the water in puddles and the stream. Children may experience water freezing if it is a frosty March morning, and throughout the day they will see that as the sun warms the environment up and the puddles and stream will melt. This will help them to develop their knowledge and begin to understand the scientific concepts of freezing and thawing (Welsh Government, 2020a).

Children can also be provided with the tools to strengthen their understanding of mathematical concepts. For example, adults can provide items such as cups, measuring jugs and pipets for water play in the stream. This will allow the children to learn about measurements, volume, weight and capacity of water (Welsh Government, 2020b). Furthermore, children will also be developing fine and gross motor skills through tipping and pouring, squeezing pipets, bending down and collecting and carrying water (Welsh Government, 2020c).

Part 3**RISK BENEFIT ASSESSMENT**

Location / Activity:	Outdoor Area - Woodland	Date:	01/03/22
Assessor:	Aimee Beynon	Review date:	25/03/22

The boxes in the table below will expand as you type into them; pre-entered text is simply for illustration. You should delete irrelevant items and replace with text relevant to your circumstances.

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**.

ACTIVITY	How will young people BENEFIT from this activity?	Hazards and risks	Who is at risk?	PRECAUTIONS in place to reduce the risk of injury	Overall risk RATING: L/M/H
Walking on uneven ground.	This provides children with the opportunity to develop their proprioception senses and their vestibular (balance) senses. Children will encounter sloping ground and differing gradients and the effects this will have on their bodies. This will support their understanding of gravity, energy and forces.	Children may trip or fall resulting in minor cuts, bruises, scrapes and sprains.	Children and adults.	Explain to the children before accessing the location that the ground may feel difficult to walk and run on, so they may want to practice walking carefully first before running. Make sure children are wearing appropriate clothing for extra protection if they were to fall or trip such as long sleeves and trousers with appropriate footwear for uneven ground. Play a game which requires the children to move about on the uneven ground and practice strengthening their vestibular and proprioception senses. Have an emergency first aid kit in case of slips, trips and falls.	L

Experimenting with water and soil.	Children will develop their understanding of science and mathematical concepts such as volume, capacity and changing of state when mixing materials together. Provides opportunities for creative and imaginative play. Children may create potions or use the mixtures to finger paint and draw. This experimentation will also provide a sensory experience for the children.	Children may try to consume the water or soil which could be contaminated. Children and their clothing may get dirty and wet whilst they experiment. Children may be at risk of falling into the water and drowning.	Children and adults.	Explain to the children before entering the woodland that they must not try to put anything unknown in their mouths as they may become poorly. Place extra members of staff at different points along the stream to make sure children are closely monitored and experimenting safely. Make sure children are wearing appropriate clothing such as wellingtons and old clothes to play with water and soil. This is so that they can get stuck into their activities and explore without worrying about getting dirty and wet.	L
---	--	---	-----------------------------	---	----------

Playing with natural loose parts.	Children may want to collect different materials such as twigs, leaves, berries and rocks. This will promote understanding of mathematical concepts such as counting, shapes and sizes. This will help strengthen their gross and fine motor skills as well as their coordination as they will be picking materials up, placing them down, carrying and moving around with them.	Children may throw rocks and sticks too close to other children and adults which may result in injury. They may try to put loose parts such as berries in their mouths which may be poisonous and they could choke.	Children and adults.	Explain to the children that they must not throw anything at or around other children and adults. Discuss with the children that they must not put anything in their mouths as they may become unwell. Adults can observe children's behaviour and actions to ensure that they are experimenting and playing appropriately.	L
--	--	---	-----------------------------	--	----------

Exploring the woodland and things they see including plants, trees, flowers and insects.	Children will develop their understanding of other living things by learning about life cycles, habitats and how things grow. This will strengthen their physical development as they will be walking on uneven ground to explore. Children will develop their understanding of mathematical concepts such as counting and area and also science concepts such as plant and animal life cycles.	Bites, stings and allergic reactions from handling insects. Children may try to ingest or place things in their mouths. Children may wonder off while they are exploring and become lost. Children may encounter members of the public and off lead dogs.	Children and adults.	Adults will set boundaries with the children so they are aware of the areas where they can and cannot explore and play in. Discuss with children the golden rules. For example, washing hand after handling insects and plants and remembering not to put anything in their mouths. Make sure children know not to speak to any strangers or approach any dogs and to come and find a practitioner in the event they do encounter members the public. Have a first aid kit in case of bites, stings and allergic reactions.	L
---	--	---	-----------------------------	---	----------

ACTIVITY	How will young people BENEFIT from this activity?	Hazards and risks	Who is at risk?	PRECAUTIONS in place to reduce the risk of injury	Overall risk RATING: L/M/H
Building dens and climbing trees.	Children will strengthen their teamwork and problem solving skills using metacognitive talk and sustained-shared thinking techniques. Children will engage in activities rich with mathematical concepts such as heights, lengths, size, structure and area. Children will develop their gross motor skills as they will be climbing, carrying, bending, walking and stretching.	Children may fall and seriously injure themselves if they climb too high up a tree. Trees and branches used for den building may have sharp edges, increasing risk of injury.	Children and adults.	Discuss with children the rules of how high they are allowed to climb. Make sure adults are close by and observing children climbing trees, being sure to identify areas and trees that are unsafe to explore. Adults can assess the woodland and trees prior to children's visit to ensure there are no serious hazards and risks. If sharp branches on the ground are too heavy to move, cover hazard with spare materials such as coats and set boundaries with children to avoid playing too closely.	L

ACTIVITY	How will young people BENEFIT from this activity?	Hazards and risks	Who is at risk?	PRECAUTIONS in place to reduce the risk of injury	Overall risk RATING: L/M/H
Exploring the stream.	Children will have the opportunity to learn about the life cycles within the stream and what wildlife live in there. Children will learn about the properties of water and how water moves when we jump in it or just very lightly touch it. Children can have pooh stick races in the stream, developing the concepts of counting and positions such as first, second and third.	Children may trip and fall into the water resulting in minor cuts, scrapes and bruises. Children may be at risk of drowning when around water, especially larger bodies of water such as a stream or river. Children's clothing may become wet, making the children cold and at risk of hyperthermia.	Children and adults.	Adults will discuss the golden rules with the children of what they can and cannot do around the water, and where they can and cannot go. Extra members of staff will be placed along the stream to monitor children and make sure they are safe. Children will be encouraged to wear appropriate clothing such as wet weather gear and wellies, so they can fully experience exploring the stream.	L

Part 4

The role of the adult is crucial in supporting children's learning and development of science and mathematical concepts in the outdoors. Tebbs (2021) says taking children outside to learn has a mass of benefits for their engagement in learning, understanding and knowledge, health and wellbeing and their self-confidence. She further explains that children become curious natural leaders in outdoor environments when den building and focussing on self-chosen activities. It is important that adults support children's development and learning in the outdoors where possible, by creating interesting stimulating environments and opportunities for children to meet the four purposes of the new Curriculum for Wales (Welsh Government, 2018).

In the outdoor environment, adults can support children's understanding of science and mathematical concepts through metacognitive talk and sustained-shared thinking (this is the sharing of ideas and working together, as explained by Siraj-Blatchford, 2009). Metacognition is where a person expresses their thoughts out loud and as a result, others will ponder on their words and ideas (Chick, 2013). For example, during outdoor activities such as den building or ramp making, adults can suggest ideas such as "how many sticks do you think we will need to make a den?", or "I wonder what would happen if we made the ramp steeper?" and even "what do you think will happen if we put mud on the ramp? Would the ball roll quicker or slower?".

These types of questions support children's understanding of scientific concepts such as forces, gravity and energy (Welsh Government, 2020a), but also mathematical concepts such as angles, counting and differing sizes (Welsh Government, 2020b). This support from adults encourages children to try different ideas and experiment in a fun, playful way. This further supports the ideas of Welsh Government's (2022) four purposes, which asks for children to be 'ambitious, capable learners' who engage in experimentation, questioning and enjoy problem solving. Furthermore, if practitioners are also enthusiastic and express their curiosity in the presence of children, this creates excitement and stimulation amongst children to explore their ideas with the resources they have available (National Communication Association, 2014).

Piaget's theory of children being 'little scientists' underpins the ideas of Welsh Government (2022) and National Communication Association (2014). McLeod (2020) explains Piaget believed that children build their knowledge and understanding through experimentation and practical activities. Therefore, adult support and encouragement to provide these knowledge rich opportunities is significant in developing children's understanding of science and mathematical concepts.

Another way adults can support science and mathematical concepts in the outdoors is by providing loose parts for children to use. Nicholson (1971) describes loose parts as materials that support and

facilitate a child's learning experiences. He explains these resources may allow for chemical reactions to happen (an example being mixing water with soil), they may create sounds (dropping stones into water compared to onto solid ground), involve liquids or even living things such as animals and plants. Most importantly, they are all things that children enjoy playing, inventing and experimenting with (Pacey, 2019). Therefore, if adults add loose parts such as measuring jugs, small containers for mixing in, or even sticks to an environment, they are providing the tools for children to experience science and mathematical concepts. This supports the science and mathematical concepts indicated by Welsh Government (2020a) and Welsh Government (2020b).

Casey and Robertson (2016) support Nicholson's (1971) ideas, however, although 45 years apart, this shows that theory and research still favours the suggestions of using loose parts to encourage children's curiosity and hands on approach to learning. Practitioners who continue to encourage the hands on approach to learning are also meeting the requirements of the Curriculum for Wales by Welsh Government (2022).

The Reggio Emilia Approach was founded by Loris Malaguzzi who believed that children have 100 languages of learning (The Reggio Emilia Approach, 2022a). For example, he states that children have 100 ways of thinking, discovering and playing in 100 different worlds. This suggests that there are many ways a child can learn in all types of environments. Therefore, the Reggio Emilia approach to learning ensures practitioners provide appropriate opportunities for children to maximise their experiences in a child-centred way (The Reggio Emilia Approach, 2022b). Mphahlele (2019) agrees with Malaguzzi's idea of children having 100 languages, by explaining that it is an enabler for settings to reach curriculum targets.

Bucher (2020) further supports the Reggio Emilia Approach within settings by stating that adults should listen to the children and engage with their interests. Furthermore, she says that the environment is the third teacher for children, therefore it is important for adults to adapt the environments in which children learn, so that they can show us what they can do. By taking the Reggio Emilia Approach, children can be curious in their play, experiment with the loose parts and discover their natural surroundings. As a result, children can actively engage with science and mathematical concepts, as well as develop their learning holistically (The Reggio Emilia Approach, 2022b).

Another way adults can support children's learning is to allow children to engage in activities which are self-directed or child led. Hollis Montessori School (2018) states that child led play allows children to build up their confidence and problem solving skills. Children who are free to climb trees, mix potions or make mud pies in a safe and prepared environment without adult interference allows

them to build their independence from an early age. In addition, Hollis Montessori School (2018) further states that self-directed learning through play is beneficial to the child as they can learn about science and mathematical concepts at their own pace. Giving children the opportunity of freedom to learn in a natural environment is one of the main principles of Froebel's theories (Froebel Trust, 2022). Therefore, this idea supports the ideas of Hollis Montessori School (2018).

Froebel believed that adults should provide all children with the freedom to learn and the opportunity to engage in discovery learning. The Froebel Trust (2022) suggests that adults should support children's play through engaging with nature as it is important for children to understand the different science and mathematical concepts of real environments. Tovey (2012) agrees with Froebel's principles, further adding that taking a Froebelian approach to learning should ensure that the natural environment is full of challenge and risk (such as having trees to climb or slopes to roll down).

However, Walker (2015) explains that some settings are hesitant of allowing children to engage in outdoor risk taking and learning. This is because of the risk of accidents and the consequences they may entail. As a result of this, some children are unable to have the freedom of stimulating and engaging outdoor environments and are therefore unable to learn and develop to their full potential. Little, Sandseter and Wyver (2012) explain that outdoor physical risk can be seen as dangerous and is ultimately avoided in western countries such as the United Kingdom and the United States of America, when compared with other Scandinavian countries such as Norway and Sweden.

To encourage practitioners to provide children with more opportunities to learn and be curious through risky play, they should try to further educate themselves through training. From this, they should see that the benefits often outweigh the risks when children learn through this medium (Care Inspectorate, 2020). Manners (2019) agrees by explaining children benefit by engaging in risk taking outdoors as they strengthen their physical, social and emotional development. Adults who support self-directed learning are facilitating a child's learning in the outdoors through play. A supporting quote from Albert Einstein says, "play is the highest form of research" (Anne Hill International, 2021).

Observing children is another way adults can support their learning in the outdoors. By standing back and observing them, adults can gain a better understanding of what extra support children may need to broaden their knowledge holistically, as well as in science and mathematical concepts. Montessori Guide (2021) supports this idea by saying observation is a key teaching tool for early years practitioners.

The principles of Froebel's teachings further underpin the ideas of Montessori, by stating that adults should allow time and freedom for children when exploring in natural spaces (Froebel Trust, 2022).

This provides adults with the opportunities to observe children engaging in discovery learning, and therefore will gain a better understanding of the capabilities of the whole child. Pacey (2016) supports Froebel Trust (2022), who says that observing children helps practitioners understand what interests the child and helps them to see if they are showing signs of effective learning. Both views support the ideas of Bruner's Spiral Curriculum, which suggests that children should build up their own knowledge. Therefore, Bruner believed the adults role is to assist children's learning rather than tell them what they need to know (McLeod, 2019).

On the other hand, some early years practitioners have voiced that they often do not have the time to let children explore their curiosities in an outdoor environment. This may be because of the pressure to meet the statutory requirements of the national curriculum, with no time to respond to children's needs (Shepherd, 2009). Learning Through Landscapes (2018) shows that 87% of teachers said that they would like to spend more time outdoors with children so that they can learn about concepts such as science and maths naturally and independently. They further state that 97% of teachers believe that outdoor play and discovery learning is crucial for children to reach their full potential and to support their wellbeing. Learning Through Landscapes (2018) further explains that more than 65% of primary schools globally get less than an hour of outdoor play time a day.

However, the new Curriculum for Wales beginning in September 2022 aims to provide more opportunities for practitioners to take a more integrated approach to children's learning. Welsh Government (2020d) explains that the new curriculum will give early years educators more time, freedom and hands on approaches to teaching children. This is one of the main ways adults will support children's learning, which will also encourage children to become 'Ambitious, capable learners, healthy and confident individuals and ethically informed citizens of Wales and the world', (Welsh Government, 2018).

In relation to observation, adults must be able to document and assess children's learning appropriately. Adults should constantly be measuring the progress of the child, not just one or twice a year. The Subordinate Legislation Resultant of the Curriculum Assessment (Wales) Act 2021 ensures that a relevant person is responsible for continuously promoting and maintaining the progress of the child (Welsh Government, 2021). In contrast to the previous methods of assessment within the national framework, this mode of assessment aims to create a holistic picture of the child, encouraging practitioners to support and challenge children's development accordingly.

Furthermore, it is also essential that adults can document that learning and progression is happening for all children. For example, in New Zealand the Te Whariki curriculum encourages adults to make children's learning visible for all to see (Ministry of Education, New Zealand, 2017). This shows

children's understanding and portrays what they can do independently. It also shows how their learning is progressing and aims to identify any areas the child may need extra support from adults (Te Whariki Online, 2022). Therefore, the way in which adults assess and document a child's learning is pivotal in the practitioner's role to successfully support their development in all areas of learning.

Practitioners must encourage children to ponder and think about the how's and why's of the world through sustained-shared thinking and metacognition. Creating and providing highly stimulating science and mathematically rich environments for children is also an important part of the adult's role, so they are free to play, experiment, carry out child led activities and use loose parts to discover their own learning as per Bruner and Froebel's theories. Therefore, the role of the adult is essential in supporting a child's learning and development holistically, as well as in understanding science and mathematical concepts.

Reference List

Anne Hill International (2021) “*Play is the highest form of research*” – Albert Einstein.

Available at: <https://annehill.school/play-is-the-highest-form-of-research-albert-einstein/>

(Accessed: 22 March 2022).

Beautiful England Photos (No Date) *Woodland stream, Bickleigh Mill, Bickleigh* [image].

Available at: <https://www.beautifulenglandphotos.uk/bickleigh-devon/woodland-stream-bickleigh-mill-bickleigh/>

(Accessed: 6 March 2022).

British Association of Early Childhood Education (2022) *Taking risks in play*. Available at:

<https://early-education.org.uk/taking-risks-in-play/> (Accessed: 23 March 2022).

Bucher, A. (2020) ‘7 Ideas from Reggio Emilia That Any Early Childhood Teacher Can Use’,

George Lucas Educational Foundation [blog]. 22 December. Available at:

<https://www.edutopia.org/article/7-ideas-reggio-emilia-any-early-childhood-teacher-can-use>

(Accessed: 20 March 2022).

Care Inspectorate (2020) *Risky Play – Safer Learning!* Available at:

<https://hub.careinspectorate.com/training-providers/ndna/risky-play-safer-learning/> (Accessed:

25 March 2022).

Casey, T. and Robertson, D. (2016) *Loose Parts*. Available at:

<https://www.inspiringscotland.org.uk/wp-content/uploads/2017/03/Loose-Parts-Play-web.pdf>

(Accessed: 19 March 2022).

Chick, N. (2013) *Metacognition*. Available at: [https://cft.vanderbilt.edu/guides-sub-](https://cft.vanderbilt.edu/guides-sub-pages/metacognition/)

[pages/metacognition/](https://cft.vanderbilt.edu/guides-sub-pages/metacognition/) (Accessed: 17 March 2022).

Froebel Trust (2022) *Froebelian Principles*. Available at: [https://www.froebel.org.uk/about-](https://www.froebel.org.uk/about-us/froebelian-principles)

[us/froebelian-principles](https://www.froebel.org.uk/about-us/froebelian-principles) (Accessed: 20 March 2022).

Hollis Montessori School (2018) *Why Encourage Self-Directed Play?* Available at:

[https://hollismontessori.org/blog/2018/2/19/why-encourage-self-directed-](https://hollismontessori.org/blog/2018/2/19/why-encourage-self-directed-play#:~:text=How%20can%20self-directed%20play%20benefit%20children%3F%20It,find%20the%20innate%20joy%20in%20their%20play.%20)

[play#:~:text=How%20can%20self-](https://hollismontessori.org/blog/2018/2/19/why-encourage-self-directed-play#:~:text=How%20can%20self-directed%20play%20benefit%20children%3F%20It,find%20the%20innate%20joy%20in%20their%20play.%20)

[directed%20play%20benefit%20children%3F%20It,find%20the%20innate%20joy%20in](https://hollismontessori.org/blog/2018/2/19/why-encourage-self-directed-play#:~:text=How%20can%20self-directed%20play%20benefit%20children%3F%20It,find%20the%20innate%20joy%20in%20their%20play.%20)

[%20their%20play.%20](https://hollismontessori.org/blog/2018/2/19/why-encourage-self-directed-play#:~:text=How%20can%20self-directed%20play%20benefit%20children%3F%20It,find%20the%20innate%20joy%20in%20their%20play.%20) (Accessed: 20 March 2022).

Learning Through Landscapes (2018) *Re-connecting with Nature*. Available at:

<https://www.ltl.org.uk/> (Accessed: 25 March 2022).

Little, H., Sandseter, E. B. H. and Wyver, S. (2012) 'Early Childhood Teachers' Beliefs about Children's Risky Play in Australia and Norway', *Contemporary Issues in Early Childhood*, 13(4), pp. 300-316. Available at:

<https://journals.sagepub.com/doi/pdf/10.2304/ciec.2012.13.4.300> (Accessed: 22 March 2022).

Manners, L. (2019) 'Supporting parents to understand the benefits of risky play', *Foundation Stage Forum* [blog]. 10 May. Available at: <https://eyfs.info/articles.html/teaching-and-learning/supporting-parents-to-understand-the-benefits-of-%E2%80%9Brisky%E2%80%99-play-r250/> (Accessed: 22 March 2022).

McLeod, S. (2019) *Bruner – Learning Theory in Education*. Available at: <https://www.simplypsychology.org/bruner.html> (Accessed: 26 March 2022).

McLeod, S. (2020) 'Piaget's Stages of Cognitive Development', *Simply Psychology* [blog]. 7 December. Available at: <https://www.simplypsychology.org/piaget.html> (Accessed: 18 March 2022).

Ministry of Education, New Zealand (2017) *Te Whariki: Early Childhood Curriculum*. Available at: <https://tewhariki.s3.ap-southeast-2.amazonaws.com/public/Key-documents/Files/Te-Whariki-Early-Childhood-Curriculum.pdf> (Accessed: 26 March 2022).

Montessori Guide (2021) *Observation*. Available at: <https://montessoriguide.org/observation> (Accessed: 25 March 2022).

Mphahlele, R.S.S. (2019) 'Exploring the role of Malaguzzi's "Hundred Languages of Children" in early childhood education', *South African Journal of Childhood Education*, 9(1), pp. 2223-7674. Available at: <https://files.eric.ed.gov/fulltext/EJ1232221.pdf> (Accessed: 20 March 2022).

National Communication Association (2014) *Teaching with Enthusiasm: Engaging Students, Sparking Curiosity, and Jumpstarting Motivation*. Available at: <https://www.natcom.org/communication-currents/instructors-corner-3-teaching-enthusiasm-engaging-students-sparking-curiosity#:~:text=An%20enthusiastic%20teacher%20often%20spices%20the%20class%20with,of%20students%20and%20jumpstarts%20their%20motivation%20to%20learn.> (Accessed: 18 March 2022).

Nicholson, S. (1971) 'How NOT to Cheat Children: The Theory of Loose Parts', *Landscape Architecture*, 62, pp. 30-34. Available at: <https://media.kaboom.org/docs/documents/pdf/ip/Imagination-Playground-Theory-of-Loose-Parts-Simon-Nicholson.pdf> (Accessed: 19 March 2022).

Pacey (2016) *Supporting members to provide the highest standards of care and learning for children*. Available at: [https://www.pacey.org.uk/Pacey/media/Website-files/PACEY%20member%20practice%20guides%20\(PDFs\)/PG05-Child-observations-learning-journeys.pdf#:~:text=Observation%20is%20an%20essential%20part%20of%20your%20practice,use%20these%20observations%20to%20support%20children%20to%20progress](https://www.pacey.org.uk/Pacey/media/Website-files/PACEY%20member%20practice%20guides%20(PDFs)/PG05-Child-observations-learning-journeys.pdf#:~:text=Observation%20is%20an%20essential%20part%20of%20your%20practice,use%20these%20observations%20to%20support%20children%20to%20progress). (Accessed: 25 March 2022).

Pacey (2019) *Getting to grips with loose parts play*. Available at: <https://www.pacey.org.uk/news-and-views/pacey-blog/2019/march-2019/getting-to-grips-with-loose-parts-play/> (Accessed: 25 March 2022).

Pathways (2022a) *What is the Vestibular Sense?* Understanding the “Balance” Sense. Available at: <https://pathways.org/what-is-the-vestibular-sense/> (Accessed: 8 March 2022).

Pathways (2022b) *What is Proprioception?* Understanding the “Body Awareness” Sense. Available at: <https://pathways.org/what-is-the-proprioeption-sense/> (Accessed: 8 March 2022).

Shepherd, J. (2009) ‘Prescriptive national curriculum restricts teachers’, *The Guardian*, 13th April. Available at: <https://www.theguardian.com/education/2009/apr/13/national-curriculum-restricts-teachers> (Accessed: 25 March 2022).

Siraj-Blatchford, I. (2009) ‘Conceptualising progression in the pedagogy of play and sustained shared thinking in early childhood education: A Vygotskian perspective’, *Educational and Child Psychology*, 26(2). Available at: <https://discovery.ucl.ac.uk/id/eprint/10006091/1/Siraj-Blatchford2009Conceptualising77.pdf> (Accessed: 18 March 2022).

Tebbs, A. (2021) ‘The benefits of outdoor learning in the Early Years’, *National Literacy Trust* [blog], 9 March. Available at: <https://literacytrust.org.uk/blog/the-benefits-of-outdoor-learning-in-the-early-years/#:~:text=Research%20from%20T.%20Gill%20showed%20that%20outdoor%20learning,trough%20hands-on%20learning%20experiences%20in%20a%20woodland%20environment>. (Accessed: 17 March 2022).

Te Whariki Online (2022) *Assessment for Learning*. Available at: <https://tewhariki.tki.org.nz/en/assessment-for-learning/> (Accessed: 26 March 2022).

Tovey, H. (2012) *Bringing the Froebel Approach to your Early Years Practice*. Oxfordshire: Routledge.

Tovey, H. (2022) *A Froebelian Approach: Outdoor Play and Exploration*. Available at: <https://www.froebel.org.uk/uploads/documents/FT-Outdoor-Play-Pamphlet.pdf> (Accessed: 26 March 2022).

The Reggio Emilia Approach (2022a) *100 Languages*. Available at: <https://www.reggiochildren.it/en/reggio-emilia-approach/100-linguaggi-en/> (Accessed: 19 March 2022).

The Reggio Emilia Approach (2022b) *Reggio Emilia Approach*. Available at: <https://www.reggiochildren.it/en/reggio-emilia-approach/> (Accessed: 19 March 2022).

Walker, E. (2015) *Supporting Risky Play*. Available at: <https://app.croneri.co.uk/feature-articles/supporting-risky-play> (Accessed: 22 March 2022).

Welsh Government (2018) *The Four Purposes for the Curriculum for Wales*. Available at: <https://gov.wales/sites/default/files/publications/2018-03/the-four-purposes-of-the-curriculum-for-wales.pdf> (Accessed: 17 March 2022).

Welsh Government (2020a) *Area of Learning and Experience: Science & Technology*. Available at: <https://hwb.gov.wales/curriculum-for-wales/science-and-technology/descriptions-of-learning/> (Accessed: 10 March 2022).

Welsh Government (2020b) *Area of Learning and Experience: Mathematics and Numeracy*. Available at: <https://hwb.gov.wales/curriculum-for-wales/mathematics-and-numeracy/descriptions-of-learning/> (Accessed: 10 March 2022).

Welsh Government (2020c) *Area of Learning and Experience: Health and Wellbeing*. Available at: <https://hwb.gov.wales/curriculum-for-wales/health-and-well-being/descriptions-of-learning/> (Accessed: 23 March 2022).

Welsh Government (2020d) *Curriculum for Wales: Overview*. Available at: <https://gov.wales/curriculum-wales-overview> (Accessed: 25 March 2022).

Welsh Government (2021) *Assessment Arrangements: Subordinate Legislation Resultant of the Curriculum and Assessment (Wales) Act 2021*. Available at: <https://gov.wales/sites/default/files/consultations/2021-09/assessment-arrangements-consultation-document.pdf> (Accessed: 26 March 2022).

Welsh Government (2022) *The New Curriculum for Wales*. Available at:

<https://hwb.gov.wales/api/storage/e4dcdb2e-f87f-4f00-b110-488289cc02ca/220209-easy-read.pdf> (Accessed: 18 March 2022).