

Y Maen Chwyl / The Rocking Stone



(Thesilicontribesman, 2023)

Our Learning Journey

Today we are making the most of the Spring weather by taking the our 14 Nursery children, aged, 3 -4, accompanied by 3 'Aunties' on a walk through the Taff trail to visit The Rocking Stone - a glacial boulder from the Ice age, on hearing this, the children talk about dinosaurs, fossils and volcanos, demonstrating knowledge and understanding about scientific phenomena, surrounded by smaller stones arranged in a circular formation situated in common land near our school. The area is familiar with the children who often visit with their families to ride bikes and walk their dogs, which they always tell us as we approach the area and they begin to recognise where they are, the sense of belonging enhances the children's comfort and feeling of safety outside of the school gates and helps them feel empowered to explore the area. The New Curriculum for Wales (Welsh Government,2023), asks us to ensure that we are promoting spiritual development and Cynefin and knowledge and understanding of the world including our local area.

On our journey, we spot cabbage White Butterflies fluttering around the bushes, the children count them as they fly around, most of the children see four, but one lucky person saw 'one hundred million!'

Louis tries to catch them by jumping and clapping his hands together and Charlie tells him he is going to 'smash them up' and tries to stop him. Auntie Soph ushers the group forward to the Rocking stone and tells them a folk tale her grandfather told her when she was little about hurting butterflies being illegal in Ireland because they were souls of people who died, knowing the children have a morbid fascination with death and tell their own stories about pets and loved ones who have died in a matter of fact way. We talk to the children about growing up, aging, and they recognise that all living things have life cycles, Auntie Clare is asking some children what they think butterfly babies look like, and they hunt for caterpillars. Studies have shown that a knowledge of folklore enhances a connection with the environment and deepens understanding of environmental impact (Ahi, Yaya and Ozsoy, 2014) so we share them regularly as part of our schools pledge to protecting the environment.

As we arrive, the children struggle to climb the slope to the Stone, we encourage them to use their muscles to get them to the top and remind them they can rest when they get there, which they often forgo and roll back down, exploring gravity and the sensation of being pulled by an invisible force which develops their sense of proprioception. They can discuss speed, acceleration, friction and understand factors that can affect this such as the weather – heat, wind, water and ice.

'I didn't think I would stop!' Amelia says, noticing how she gathered speed. 'I'm rolling in a circle' laughs Magi, she has recognised the shape and direction of her movement, we tell her she rolled at an angle (demonstrated with our hands) she tries again and again before moving on.

The Rocking stone is surrounded by a concentric circle of smaller stones, some children are playing hide and seek here, using comparison to judge the best size and shape to conceal their bodies.

We measure the stones using our hands and use leg span to measure the circumference of the area, counting the rocks and using small pebbles to make our own representations, making estimates about how big the centre stone is in relation to our bodies.

Judah has noticed the shadows cast by the stones, he is amazed by how tall his own shadow is and we talk about how wizards used to tell the time with the shadows, he searches for a dandelion to find out what the time is, counting each puff to determine it is 6 'o' clock.

Some children have climbed the stone. 'It's windy up here' Willow's sense of balance is challenged at this height and she asks to get down, we guide her down the rock and encourage her to do so independently. She makes an assessment of where she is in relation to the ground and jumps down.

under the rock, some children are using sticks to scrape the bare earth hoping to make the stone rock, they push it and stand on top with a wide leg stance to rock it, when these methods do not work, they ask Auntie Lucy to jump on it, they have accesses and sorted us by size and she is the biggest.

Louis jams a stick under the rock and applies pressure, we remark on how clever he is creating a lever, we discuss weight, propulsion, push and pull motions.

'I can see Sainsburys!' we ask them if it looks small from far away and they try to explain their visual perception using metacognitive language about distance and height.

At the nearby stream, the water turns brown when disturbed by the children and they ponder cause and effect, talk about whirlpools, stirring and mixing, motion and stillness, and observe how the mud settles eventually by filling containers with the muddy water. We use nets and magnifying glasses to explore the insects found in the streams and talk about the life cycle of those insects.

They also experiment with sinking and floating, dropping leaves, sticks and stones into the water, they can race their objects and make predictions about why their object is likely to win, and examine why they may have lost instead.

On rainy days, water gushes from the underground cavity down the hill, this is very exciting and the children observe how it floods and squirts

from underground, putting their hands in to feel the force and noticing how their hands become red by doing this, they appreciate how the cold affects their bodies and they rub their hands together to warm up and talk about next time, having hot chocolate to warm up.

They notice grey clouds and predict that it will rain soon, 'maybe we'll see thunder' we joke about how we won't see it, but we might here it and the children explain they shouldn't hide in the woods in case they get struck by lightning, which leads to discussion about electricity and conductive materials, danger and risk. After deciding it is safe to enter, a few children climb the trees, and swing from the branches, benefitting from the vestibular experience, Iulian is able to swing his legs around and hold on with his feet, his friends take turns on the branch that is at the correct height to do this, they help each other to sequence this skill, practicing until they reach the momentum that propels their feet to the branch.

The ground under the tree is bare earth, the children wonder what has led to this, they hypothesise that animals have eaten the grass, Auntie Soph points out that it is dark in the woods, they understand that plants need light and begin to piece together an early understanding of plant life cycles.

We ask the children if all the fun has made them hungry, and we decide to head back to school to refuel our bodies before we run out of energy.

The children use the return walk to consolidate their learning by talking to each other about what they enjoyed the most.

Risk Assessment form

Area: The Common (Rocking Stone area)	Date: 29/09/2023	Assessor: Sophie Dwyer
Notes: A visit to the area was made prior to the trip with the children to ensure the area was free of hazards that would prevent the trip from taking place, such as extreme weather conditions or debris from misuse of the common area (broken bottles etc.). Adults accompanying the children on the trip will have a bag containing a register, first aid kit, mobile phone with full charge and any emergency medications prescribed to children who may need them (EpiPen and inhaler). Boundaries and expectations, including 'No-Go' areas, will be agreed with the children and adults before the trip so that we can enjoy the opportunity together safely.		

Activity/ Experience	Benefit	Potential risks	Risk Rating L/M/H	Who is at risk	Precautions Taken
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Climbing rocks	Development of gross motor skills Strengthening of muscles. Develops sense of proprioception. Increased confidence and independence. Evaluating risk and developing decision-making skills. Sequencing.	Falls, grazes, sprains, bruises, fractures	High	Adults and Children	Appropriate ratio of staff to monitor and support children. Adults and knowledgeable others to role model safe behaviour and encourage children to notice their surroundings (is it wet or windy?) and judge the risks for themselves. Provide prior experiences to strengthen children's balance and coordination so they are able to scale the rock and get back to ground safely. Appropriate footwear to be worn.
Walking in grassland	Practice walking on uneven surfaces. Gentle exercise to build stamina, lung capacity and muscle. Additional sensory experience when walking barefoot if the conditions allow. Improved balance, coordination, and spatial awareness. Opportunity to engage with nature.	Trips, falls, grazes, bruises, insect bites (see 'Bug Hunting') and skin irritation from plants.	Low	Adults and Children	Model mindful walking, encouraging children to notice their surroundings and vocalise things they notice to prevent them tripping on exposed roots or slipping on wet leaves. Wear appropriate clothing to protect legs from areas where course plants/nettles grow.

Climbing trees	Improves Muscular strength, flexibility and hand and eye coordination. Develops sense of proprioception. Midline Crossover – improves physical and mental coordination which aids future skill development i.e. reading and writing. Opportunity to use own judgment to assess risk. Perception of height and size.	Splinters, cuts bruises, falls, sprains, fractures.	High	Adults and children	Supervise children who are climbing and remain calm and positive to inspire confidence and self-belief. Give children opportunities to practice climbing in other areas. Discuss the difference between living wood (strong and stable, green leaves) and dead wood (soft and weak, no leaves) so they can climb safely. Explain that climbing is off limits when the weather makes climbing hazardous.
Exploring Loose parts – pinecones, acorns, stones etc.	Sensorial experience. Opportunity to explore open ended materials. Incentive to use mathematical ideas in play, such as collecting, sorting, sharing, and ordering.	Splinters, choking on small pieces.	Medium	Children	Remove any materials that pose an obvious risk. Staff to observe children during their exploration, monitoring children who explore objects orally closely so they can benefit from these materials. Establish safe play behaviours across the curriculum.
Playing in the mud	Sensorial experience. Opportunity to explore open ended materials.	Contact with eyes. Ingestion.	Low	Children	Staff to check the area for contaminants or dangerous items . Observe the children at their play and encourage them to tell an adult if they find something strange.

	Exposure to beneficial bacteria that can develop a robust immune system. Gives the children a sense of responsibility, empowering them to take care of themselves and the environment.				Talk to children about the reasons we do not want to eat mud (Microorganisms, faeces etc.) Practice handwashing after play. Children with Cystic Fibrosis ideally should wear gloves during exploration as an extra precaution.
Playing in stream.	Hands on experience of mathematical and scientific concepts e.g., Volume, speed, direction, force, changing states, floating, and sinking, displacement, absorption. Exploring wildlife, life cycles and eco systems. Develop language and meta cognitive talk.	Slipping. Drowning. Ingesting stagnant water.	Low	Adults and Children	Staff to remain close to the children whenever they are in the water, reinforce boundaries - it is unsafe to play in the stream without an adult to help keep you safe. Ensure children have appropriate footwear to enjoy the stream comfortably. Encourage children to notice how the stream is behaving (is the water rushing? Are the pebbles green and slippery?) so they can make prepare and adjust their plans. Inform the children of the microorganisms in the water, so even if the water looks clean ,it could make you ill. Children with Cystic Fibrosis ideally should wear gloves during exploration as an extra precaution. Inform the children the stream is a No-Go area if it is too icy or fast moving to manage safely.
Picking berries.	Sensory experience. Connecting with nature.	Scratches from brambles.	Low	Children	Staff to monitor children closely in the areas where berries grow.

	Stimulates creativity and imagination. Sequencing (pick -cook – make – share – eat). Access to open ended materials. Cause and effect (squeezing and squashing the fruit).	Sickness from ingestion. Allergic reaction. Choking.			Engage with the children to remind them why they should not eat the berries (They could be dirty and need to be washed before they are safe to eat, or they may not be poisonous to humans). Wear appropriate clothing to protect arms and legs from thorny areas. Encourage the children to recognise that fruit and thorns are usually found together so they need to be careful when picking.
Bug hunting.	Connecting with nature. Develops compassion and empathy for living things. Practical experience of pressure, size and strength by collecting and handling insects carefully.	Insect bites, stings / possible allergic reaction. E coli from snails.	Low	Children	Monitor children in areas where insects are abundant to intervene if they are disturbing the insects to the point of self-defence. Promote empathy by discussing how they would feel if a giant was picking them up to promote gentle hands that will be less likely to get a sting. if there are children with known allergies, ensure they're EpiPen is at hand. Practice handwashing after exploration.

Rolling down hills.	Midline Crossover – improves physical and mental coordination which aids future skill development i.e., reading and writing. Sensory Development. Knowledge and understanding of scientific concepts such as gravity, speed, force and velocity. Gross Motor Development. Develops sense of proprioception and Spatial awareness.	Cuts. Bruises. Sprains. Friction burns. Collision with others.	Low	Adults and children	Appropriate adult to child ratio. Role model safe play. Encourage children to be aware of others and take care as they roll.
Weather Changes.	Experience of seasonal changes. Perception of temperature. vitamin D boost from sunshine, Learning opportunities from spontaneous changes in environment. Water play opportunity in wet weather Practice walking on unstable surfaces in snow and ice.	Sun burn. Dehydration. Slips and falls. Sprains. Cuts. Bruises. Fractures.	Medium	Adults and Children	Appropriate adult to child ratio. Appropriate clothing to be worn according to the weather forecast). Children to apply SPF in Sunny weather. Access to drinking water during hot weather.

	Understanding of cause and effect.				
Accidental exposure to animal faeces.	N/A	Illness and infection from exposure to animal faeces.	Medium	Adults and Children	Area of play to be monitored by adults. Children encouraged to tell an adult if they see animals or their droppings. Children to practice good hygiene while toileting so they understand why faeces can make you ill. Practice handwashing after play.

Awe and wonder- science, mathematics, and the outdoors.

Children who have opportunities to play outdoors benefit from a range of advantages to their physical, social, and cognitive development. Evidence collaborated by researchers at Loughborough University (2017) has shown that the experiential learning they get in the natural environment equips children with transferrable skills that are essential to lifelong success and academic achievement. Examples of these skills are those listed by Bernard (1991) quoted by Gull, Goldstein and Rosengarten (2017) in his description of a resilient child, as one who possesses problem solving skills, autonomy, social competence and a sense of purpose. Although this research is 32 years old, the importance of these skills endures in up to date educational models such as the curriculum for funded non-maintained nursery settings (Welsh Government, 2021) whose four purposes to support Ambitious, capable learners, Enterprising, creative contributors, Ethical, informed citizens and Healthy, confident individuals, expand on these traits and work to develop them in Early Years settings in Wales.

The child development models and theories cited in this essay agree that the outdoor environment is a valuable resource to achieve these goals. Early Years practitioners are able to capitalise on this rich and stimulating environment to promote the development of Maths and Science through stimulating curiosity and creativity via child led, play based activity.

Richardson (2014) refers to the vision statements of the Early Years Foundation Phase (England) to describe the role of the adult as an enthusiastic and knowledgeable facilitator, with the ability to unlock the potential of the outdoors, creating a safe and enabling environment that will allow children to engage in free play that supports their holistic development, stimulating their curiosity and encourage them to experiment and take risks.

The New curriculum for Wales describes iteration of skills and ideas as important to the development of problem solving skills essential to the progression of scientific skills (Welsh Government, 2019), This statement is backed up by White (2014) who tells us that the outdoor environment offers opportunities to experiment and repeat ideas and skills through playful experiences. White (2014) further suggests that

children have a natural inclination to being outdoors because humans are designed to be outside where they are able to benefit holistically from the naturally complex and endlessly fascinating natural world where potential learning experiences cannot be matched by the indoor learning environment.

Goldstein and Rosengarten (2017) suggest outdoor activity is conducive to the development of critical thinking, risk taking and problem solving skills, through trial and error occurring through play, where failure is not perceived as inherently bad, or something that reflects negatively on the child, it is just part of the fun and therefore, they will not be put off trying again, or doing things differently.

Wallis (2014) observed a head teacher who encouraged her students to embrace failure in order to become more creative thinkers who are not afraid to explore new opportunities after noticing that very young children who have not yet learned to fear failure, learn very quickly through their play.

Natural artefacts can be gathered, sorted, counted, shared and exchanged. Pattern and symmetry can be found in the wings of insects, leaves, reflections in puddles. We can discover weight and volume by filling and emptying buckets with mud, water and sand. Richardson (2014) demonstrates how these hands on experiences develop a meaningful understanding of mathematics as children collect, count and sort these loose parts, comparing size and shape of real, naturally appealing objects rather than paper based examples in traditional class based numeracy . The curriculum for funded non-maintained nursery settings (Welsh Government, 2021) reminds adults to model mathematical language to foster enjoyment of the subject as Maths is used all the time in different and interesting ways and should not be something that children dread. Maths is a subject that can trigger an emotional response in adults, including educators, often due to personal failure in the area (Bibby, 2010). There is an expectation that the subject is boring and holding small children's attention to teach them simple numeracy seems like a daunting task. However, allowing children to discover maths in their everyday environment will result in them using and developing those skills naturally. Clements and Sarama (2014) describe how a collaborative approach was used in order to teach a class of children with additional learning needs, The teacher allowed children to draw on their own experiences and engage in a creative project using geometric shapes instead of a traditional

adult led maths lesson, the practitioner was able to observe mathematical language concepts being explored freely, in an activity chosen by the participants, as they designed and described their work.

Waite-Stupiansky and Cohen (2019) inform us that outdoor environments promotes scientific inquiry in children who are allowed to explore freely, observe changes and indulge their curiosity about the natural world. They begin their own 'research' as they wonder and ask questions about their surroundings, this is how they develop an understanding of scientific concepts while they naturally problem solve when playing outdoors, understanding that they need a coat if it is cold, or a hat if it is sunny - which relates to knowledge and understanding of weather, temperature and cause and effect - how to balance a plank on tyres to make a bridge, which requires children to make and explore balance and proprioception. They may start engaging in metacognitive talk, where they use 'thinking language' (St. Matthew's Research School, 2021) to verbalise and discuss ideas as they build on their own knowledge and hypothesise with a more knowledgeable other, Vygotsky theorised that cognitive growth is maximised when an appropriate challenge is set by the more knowledgeable other (McLeod, 2014), not necessarily the adult, the other children at play will all have their own ideas and experiences that can influence each other's learning and confidence as they engage in collaborative, child led learning (Istead and Shapiro, 2014).

'Loose parts theory' was developed by Nicholson (1971) who describes Loose parts as 'variables' which spark the curiosity and imagination of children who will use them in open ended play to collect, build, create and learn (Gull, Goldstein and Rosengarten, 2019) In the outdoors, variables you can expect to see would be sticks, mud, leaves, pine cones, wildlife wind and rain. Outdoor environments are naturally ever changing which provides valuable experiences that can challenge children and enhance their scientific knowledge (Priyanti and Warmansyah). Because variables are non-prescriptive, children instinctively use their creativity to assign meaning and purpose to loose parts, for example, using sticks as tools or swings. Enabling adults can enrich the outdoor area by adding resources such as tools, containers, magnifying glasses, tyres and ropes for children to examine the environment more closely and experiment with the natural resources. Influential models of

education such as Montessori, Waldorf, and Reggio Emilia education advocate the need for experiential learning in order to acquire the skills needed for a fulfilling life. Playing with a variety of loose parts supports learning across these approaches (Aljabreen, 2020).

Nicholson argued that the degree of creativity and innovation a child presents is directly proportional to the number of variables they have the opportunity to explore in their environment, so the outdoors is an abundant Loose parts resource as it is rich in Variables. Similarly, Gibson (1979) suggested that objects are 'afforded' different meanings and purposes, unique to the person engaging with that object, so one person may see an uprooted tree whereas another sees a pirate ship.

Adults must have confidence that the children are capable in their play and resist the urge to define or over explain, but support meta cognitive talk to build their existing knowledge and scaffold emerging skills (Istead and Shapiro, 2014).

Risky play can reinforce learning by giving children a multisensory experience that connects them to their sense of proprioception – the innate ability to sense where your body is in relation to the environment – this requires the skin, muscles and joints to be stimulated and helps children develop spatial awareness, make judgements about weight, height and forces (Way Tong Chu, 2017). Effective kinaesthetic activities that develop children's proprioception can be found as a daily activity in Forest schools, a Danish model of outdoor learning, the role of the adult as facilitator, and not a director of learning, who works in collaboration to negotiate boundaries and allow children to explore risk safely outdoors so they can climb trees, move heavy objects to build dens, roll down hills and roam the uneven surfaces found on forest floors (Waite 2011). Forest schools are often more inclusive than indoor classrooms as they give children the space and freedom to direct their own learning (Kemp, 2020), however, Riquelme, Hatem, and Montoya (2016) remind us that extra care should be taken to ensure neuro divergent children are not being overstimulated during these activities, and be aware that any child who has an adverse reaction to tactile stimuli could also experience less developed motor skills, therefore, Early Years workers must practice inclusion by controlling for this likelihood and monitoring their play more closely to prevent a negative experience that could adversely affect the child's self-esteem or cause them to harm themselves unnecessarily during outdoor play.

The value of outdoor play for its propensity towards physical play was recognised in Wales when developing the Foundation phase (Welsh Assembly Government, 2009) where it is described as ‘vital’ to children’s holistic development and encouraged using the Forest School model to bring children’s learning outside.

This physical, experiential learning addresses many of the rights outlined in the United Nations Convention on the Rights of the child, such as a child’s right to grow up healthy (article 6), the child led approach respects the child’s right to say what they think should happen and be listened to (article 12), the right to learn and become the best they can be (articles 28 and 29), and the transferrable skills of assessing risk and danger for themselves supports the right to be protected from doing things that could harm them (Children’s Commissioner for Wales, 2023).

Ensuring children has access to safe, child led play in outdoor environments has been proven to contribute to the development of holistic wellbeing, opportunities to develop physically through physical play ensures children grow and develop a healthy appetite and regular sleep pattern which contributes to healthy brain development, without which, the learning of Mathematics and Science would not be possible (NCT, 2017). It also unlocks the joy of learning and experimentation and increases resilience, which are qualities essential to children becoming the creative contributors that The New Curriculum for Wales seeks to promote, (Welsh Government, 2023) With the appropriate outdoorwear and attitude, Early Years education can provide a high quality mathematics and scientific curriculum that is Child centred, inclusive and proven to have a positive effect on lifelong learning across these areas of the curriculum and build confidence and self-esteem that will improve cognitive, physical and social development of children overall.

References

- Ahi, B., Ozsoy, S. and Yaya, D. (2014) 'The Concept of Environment in Folktales from Different Cultures: Analysis of Content and Visuals.' *International Electronic Journal of Environmental Education*.4 (1), pp.1-17. Available at: <https://files.eric.ed.gov/fulltext/EJ1060556.pdf> Accessed on: 21/09/2023.
- Aljabreen, H. (2020). Montessori, Waldorf, and Reggio Emilia: A Comparative Analysis of Alternative Models of Early Childhood Education. *International Journal of Early Childhood*, 52(3), pp.337–353. <https://doi.org/10.1007/s13158-020-00277-1>.
- Bibby, T. (2002) Shame: An emotional response to doing mathematics as an adult and a teacher, *British Educational Research Journal*, 28(5), pp.705-721, DOI: [10.1080/0141192022000015543](https://doi.org/10.1080/0141192022000015543).
- Children's Commissioner for Wales (2023) UNCRC Available at: <https://www.childcomwales.org.uk/uncrc-childrens-rights/uncrc/> Accessed on: 26/09/2023.
- Clements, D. and Sarama, J.(2004) *Engaging Young Children in Mathematics*, Routledge: London.
- Cohen, L.E. and Waite-Stupiansky, S. (2019) *STEM in Early Childhood Education: How Science, Technology, Engineering, and Mathematics Strengthen Learning*. Routledge: London.

Gull, C., SL, Goldstein. and Rosengarten, T. (2017) 'Benefits and risks of tree climbing on child development and resiliency' *International Journal of Early Childhood Environmental Education*, 5(2), pp.10, available at: [EJ1180021.pdf \(ed.gov\)](#).

Gull, C., SL, Goldstein. and Rosengarten, T. (2019) 'Definitions of Loose Parts in Early Childhood Outdoor Classrooms: A Scoping Review' *International Journal of Early Childhood Environmental Education*, 6, pp.37-52.

Istead, L. and Shapiro, B. (2014) 'Recognizing the Child as Knowledgeable Other: Intergenerational Learning Research to Consider Child-to-Adult Influence on Parent and Family Eco-Knowledge.' *Journal of Research in Childhood Education*, 28(1), pp.115-127, DOI: [10.1080/02568543.2013.851751](#).

Riquelme, I., Hatem, S. and Montoya, P. (2016) 'Abnormal Pressure Pain, Touch Sensitivity, Proprioception, and Manual Dexterity in Children with Autism Spectrum Disorders.' *Neural Plasticity*, vol. 9, <https://doi.org/10.1155/2016/1723401>.

Kemp, N. (2020) 'Views from the staffroom: forest school in English primary schools', *Journal of Adventure Education and Outdoor Learning*, 20(4), pp.369-380, DOI: [10.1080/14729679.2019.1697712](#).

Loughborough University. (2017) *Study reveals benefits of forest schools*. Available at: <https://www.lboro.ac.uk/media-centre/press-releases/2017/october/study-reveals-forest-school-benefits/> Accessed on: 24/09/2023.

McLeod, S.A. (2014). *Lev Vygotsky*. Available at: [1lVgHWtwlY7Ga0JTgwcjK1eDQWkzLTusd.pdf \(akunerio.com\)](#) Accessed on: 28/09/2023.

Priyanti, N., & Jhoni Warmansyah. (2021) 'The Effect of Loose Parts Media on Early Childhood Naturalist Intelligence.' *Jurnal Pendidikan Usia Dini*, 15(2), pp. 239 - 257. <https://doi.org/10.21009/JPUUD.152.03>.

St. Matthew's Research School. (2021) *Developing Metacognition in Children in the Early Years*. Available at: <https://researchschool.org.uk/stmatthews/news/developing-metacognition-in-children-in-the-early-years> Accessed on 28/09/2023.

Welsh Assembly Government. (2023) *Statements of What Matters Code*. Available at: <https://www.gov.wales/sites/default/files/publications/2023-06/curriculum-for-wales-statements-of-what-matters-code.pdf> Accessed on:

29/09/2023.

Welsh Assembly Government. (2009) *Foundation Phase Outdoor Learning Handbook* Available at: [foundation-phase-outdoor-learning-handbook.pdf \(gov.wales\)](https://gov.wales/foundation-phase-outdoor-learning-handbook.pdf) Accessed on: 27/09/2023.

Wallis, L. (2014) *Is it good for people to fail occasionally.* Available at: <https://www.bbc.co.uk/news/magazine-26359564> Accessed on: 25/09/2023.

Way Tong Chu, V. (2017) 'Assessing Proprioception in Children: A Review.' *Journal of Motor Behaviour*, 49(4) pp.458-466, DOI: [10.1080/00222895.2016.1241744](https://doi.org/10.1080/00222895.2016.1241744).

Welsh Government. (2019) *Area of Learning and Experience Science and Technology.* Available at: [Science and Technology: Principles of progression - Hwb \(gov.wal https://hwb.gov.wales/curriculum-for-wales/science-and-technology/principles-of-progression/#Increasing%20Breadth%20and%20Depth%20of%20Knowledgees\)](https://hwb.gov.wales/curriculum-for-wales/science-and-technology/principles-of-progression/#Increasing%20Breadth%20and%20Depth%20of%20Knowledgees) Accessed on: 24/09/2023.

Welsh Government. (2023) *Curriculum for Wales: overview.* Available at: <https://www.gov.wales/curriculum-wales-overview> Accessed on: 28/09/2023.

White, J. (2013) *Playing and Learning Outdoors : Making Provision for High Quality Experiences in the Outdoor Environment with Children 3-7*, Routledge: London.

Richardson, GR. (2013) *Creating a Space to Grow : Developing Your Enabling Environment Outdoors*, 2nd ed, Routledge: New York.

The Silicon Tribesman (2023) *'The Rocking Stone', Pontypridd, Wales.* Available at: <https://thesilicontribesman.tumblr.com/post/653638255649095680/the-rocking-stone-pontypridd-wales> Accessed on:19/09/2023.