

Natural Settings and Additional Learning Needs: Perspectives from Children, Carers and Facilitators

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Contents

<u>Abstract</u>	1
Acknowledgements	2
<u>List of Tables</u>	
Table 1: Positive, Negative and Neutral Responses to Nature	30
<u>List of Images</u>	
Image 1: Richard Louv's definition of Nature Deficit Disorder	10
Image 2: UN Convention on the Rights of the Child	12
Image 3: United Nations General Assembly Equality and Inclusion	17
Image 4: Theme Processing: Observation Tiles	27
Image 5: Theme Processing Artwork Tiles	27
Image 6: Theme Processing Photograph Tiles	28
Image 7: Theme Processing Facilitator Questionnaire Tiles	29
Image 8: Theme Processing Parent/Carer Questionnaire Tiles	29
Image 9: Theme Processing Child Questionnaire Tiles	30
Image 10: Overview of the Core Themes and Subject Theme Location	31
Chapter 1. Introduction	3
Chapter 2. Literature Review	6
Chapter 3. Methodology and Research Design	19
Chapter 4. Findings	25
Chapter 5. Discussion	31
Chapter 6. Conclusion	37
<u>References</u>	39
Appendix 1: Holdworth's Student Participation Ladder	55
Appendix 2: The Lundy Model of Student Participation	56
Appendix 3: Lodges Approach to student involvement in school improvement.	57
Appendix 4: The Mosaic Approach Implemented	58
Appendix 5: Photo Tours Tiles	59
Appendix 6: Observation Tiles	64
Appendix 7: Artwork Tiles	69
Appendix 8: Example of Teacher Questionnaire Tile	74
Appendix 9: Example of Parent or Career Questionnaire Tile	78
Appendix 10: Example of Child Questionnaire Tile	82
Appendix 11: Individual Mosaics	86
Appendix 12: Further Analysis of Individual Tiles	97
Appendix 13: Ethical Approval and School Approval	100
Appendix 14: Sample Consent Form	114

DECLARATION FORM

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- 1. This work has not previously been accepted in substance for any degree and is not being concurrently submitted in candidature for any degree.**

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- 2. This dissertation is being submitted in partial fulfilment of the requirements for the degree of MA in Outdoor Education.**

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- 3. This dissertation is the result of my own independent work/investigation, except where otherwise stated.**

Other sources are acknowledged by explicit references. A bibliography is appended.

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Abstract

Educational professionals have been included in remedying the environmental and societal concerns of the modern-day world. This study focuses on how responsible individuals can design positive outdoor experiences by collecting and analysing pupil voice, then implementing those perceptions to provide agency over the experiences they are receiving. All to create human-nature relationships that are both positive for humanity and nature. The study aims to collect the perspectives of nature from children with additional learning needs, their parents and facilitators. The methodology employed will be an adapted version of the Mosaic approach to data collection. Numerous tiles are thematically analysed in conjunction to produce a holistic understanding of the subjects' perspectives. Therefore, framing how positive experiences can be planned and facilitated. The study produced several key findings: the overall perspectives of nature from children with additional learning needs are positive, with nature a place for happiness and play. Sensory considerations and negative themes were prominent, with nature descriptor themes such as colours, plants, trees and animals being present. The success of the methodology is another vital finding, giving a potential tool for appropriate pupil voice collection. Lastly, the types of data produced by the methodology and individual tiles were a finding for important consideration for any individual interested in utilising the method. The study concludes that participatory methodologies are effective in collecting pupil voice and providing pupil agency, supporting their human right to self-expression and influence. Providing researchers to exercise rigorous reflexivity during data collection, analysis and implementation.

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1. Introduction

1.1 Background

Fairbourne is a village in North Wales on the outskirts of Eryri National Park, well known for traditional family holidays. Reports claim that, due to rising sea levels, Fairbourne will be flooded within 60 years. The Welsh government made the decision not to renew the sea defences at Fairbourne, making the villagers of Fairbourne potentially the first climate refugees of Western Europe (Wall, 2019; Gerretsen, 2023; Williams, 2023). The causes of climate change are a complex and multifaceted issue and not the focus of this study. This study focuses on how educators and facilitators who are responsible for the creation and delivery of experiences can be a part of the solution to environmental concerns. Along with an increase in childhood obesity, as the government reported the highest level of obesity in reception children ever recorded (Gov.UK, 2026; RCPCH, 2026; World Health Organisation, 2025) and a reported deterioration in children's mental health, described as a crisis by the Children's Commissioner (De Souza, 2026; O'Hare, 2026; Roberts, 2026), modern society has many new and complex challenges to solve.

Nature Deficit Disorder (Louv, 2005) was created by Richard Louv when he referred to the symptoms caused by a lack of time spent in nature and, in turn, a lack of human connection to nature. These symptoms include individual concerns as well as wider concerns that affect modern societies and the overall planet, including climate change.

Natural England (2021) affirmed that time spent in nature is positive for many people. Perceptions of the majority suggest that nature produces a feeling of happiness. This, along with other research (Harris, 2021; Sharma-Brymer *et al.*, 2018), suggests that children have a positive relationship with natural spaces. However, while the Natural England study made efforts to analyse age, cultural background and geographical details of the participants, no effort was made to ascertain the learning needs of the participants. In fact, the omission of neurodivergent individuals and others with additional learning needs in research is a concern (Rogers and Boyd 2020). Galbraith and Lancaster (2020) reported, from a small-scale study regarding children diagnosed with Autism, that access to wild nature was positive and helped calm them. However, research including children with disabilities and additional learning needs is an area that requires more focus.

Research suggests that children with learning needs may perceive and experience the world differently from a 'typical' individual. The SCERTS study suggests that individuals with Autism process sensory stimuli and social situations differently from neurotypical individuals (Supekar *et al.*, 2018). Recent studies suggest that neurodivergent individuals' brains are structured differently from neurotypical individuals (Matuskey *et al.*, 2024). The UK signed the United Nations Convention on the Rights of the Child in 1991; the initiative gave children the right to voice their opinions (Clark, 2001; Crutchley, 2017). Children's agency in their learning has been considered vital in creating educational curricula (Tisdall, 2008; Rouvali and Riga, 2020; The National Governance Association, 2023). Perspectives of pupils with an

additional learning need and those who are neurodivergent are often overlooked (Rouvali and Riga, 2020; Rogers and Boyd, 2020; Warren *et al.*, 2021). Without understanding every person's perception, educational experiences that include the entire population cannot be designed. This is the objective for the proposed research. To give marginalised and often overlooked pupils with additional learning needs a voice, including their opinions regarding their experiences.

1.2 Research Focus

The study's objective is to collect the perceptions of nature from children with additional learning needs, their parents or carers and teachers or facilitators. The study will sample pupil voice effectively and constructively, supporting individual human rights. Pupil voice collection has been popular in schools over the last few decades (Jopling and Riordan, 2021; Thomson, 2011, in Littlefair and Jopling, 2020). There are concerns that pupil voice collection is tokenistic and not valued and utilised to its maximum potential (Karlsen and Ohna, 2021; Lundy, 2007). Individuals require the formulation of agency in their own lives, with this being professionals' responsibility to provide (Bloemart, 2020; Lundy, 2007; Lodge, 2005). The methodology employed in the study could provide this agency and could potentially give professionals a toolkit for collecting perspectives and supporting basic human rights.

1.3 Overall Aim and Research Objectives

The focus of the research is to provide insight into the perceived positive and negative impacts of natural environments. I have set myself the following objectives. (1) collect the perceptions of children, (2) collect the perceptions of the parents/carers, and (3) collect the perceptions of the facilitators. Thematic analysis of the data will provide an understanding of individual and population-wide perceptions of nature. The overall aim is to provide agency over the experiences individuals have in natural environments, in turn creating positive experiences and relationships with nature.

1.4 Research methods and timescales.

The research method will be multifaceted, with questionnaires given to parents and/or carers and the facilitators who are responsible for the subjects, and with other elements such as observations, artwork, picture tours and subject questionnaires to create a holistic picture of perceived positive and negative impacts. This mosaic method of data collection will be used to gain perceptions of the children. This method of data collection has proven itself successful, giving those with communication challenges a voice. (Clark, 2001; Clark, 2010; Baird, 2013; Botsoglou *et al.*, 2017; Henderson-Dekort *et al.*, 2022; Kok and Yang, 2022).

It is important to collect perceptions from facilitators and parents and carers, as this will add depth, context, reliability and efficacy to the children's perceptions. Another important layer of data that would be of interest would be historical exposure, experiences and outside influences acting on the child. These layers would add clarity to the findings suggested in my previous small-scale study when collecting children's perceptions of nature. That it's a possibility that some children could be 'masking' (Bradney, 2024). The National Autism Society (2024) states that masking is adjusting how we express ourselves. Facilitator and carer perceptions have been the more

common focus of previous research; however, when collected and analysed alongside pupil data, this could produce more robust conclusions. Giving possible insights and further proof of the presence of masking, which would then challenge the efficacy of pupil responses. Time scales for the collection of data and therefore the analysis and production of findings and conclusions will be flexible. This is due to the multifaceted nature of the data collection techniques. The individual tiles for each subject will take time to collect and time to analyse thematically. The time scale for the data to be collected will be the first twelve months, and then for the final 12 months the data can be analysed, interpreted and synthesised with research.

1.5 Value of Research

If the objectives and aim are achieved, data will be collected that provide a holistic understanding of the perceived impacts that natural surroundings have on children with additional learning needs. This study could well add to the research base for this demographic. Providing an often-overlooked demographic of children a voice and gives professionals a way of collecting pupil voice. This pupil voice is an opportunity for facilitators to create informed experiences in natural environments that are positive and constructive in stimulating relationships with the natural world, which could lead the way to a reconnection between nature and individuals, with the planet and society benefiting.

The next chapter is the Literature Review, where the recent and prominent literature will be analysed. Next will be an explanation and justification of the Methodology being employed to gather data to meet our objectives and aims. Following this will be the findings, where the raw data will be presented after being processed. Following this will be the discussion, where the data will be analysed, interpreted, and related to existing research. Finally, in the Conclusion, the practical implications of the findings will be considered.

1. Literature Review

2.1 Introduction

This literature review will focus on pertinent issues that concern humans and nature, pupil voice and children, neurodivergence and additional learning needs. These topics, explored in this sequence, will provide the contextual information and knowledge leading to the design and delivery of a study that meets the study's objectives. The study's objectives are to collect the perspectives of the natural world from children who have additional learning needs, their parents or carers and their teachers and/or facilitators. After data collection, a thematic analysis will be performed to discover any recurring themes within the subject's data and across participants. From this thematic analysis, recommendations will be formulated to help facilitators create positive experiences in natural settings. Hoping to assist individuals in having a positive outlook on nature. Supporting the assertion that if people have a positive outlook on Nature, then they are more inclined to play a positive role in natural world, benefiting both individual wellbeing, the wellbeing of natural world and society (Pyle, 1993; Brewer 2002; Louv, 2005; Clements, 2004; Dustin, 2009; Roberts, 2009; Moore, 2011; Martin *et al.* 2020; Shelldrake, 2020; Boileau and Dabaja, (2020); Pirchio *et al.* 2021; Dabaja, 2022; Selden, 2022; Sun *et al.* 2023; Dabaja, 2024). By exploring literature relating to these objectives, the study will contribute to the research base and future discussions concerning the collection of children's perspectives, particularly those with additional learning needs. Specifically, how these perspectives can frame the creation or adaptation of experiences in nature. Supporting the statement by Clark *et al.* (2003, p. 48) that 'young children will best be served by changes to policy and practice which remain alert to their differing perspectives and interests as well as their needs.'

The Literature review will begin by considering prominent and emerging literature concerning Humans, Nature and Education.

2.2 Humans, Nature and Education

Rachel de Souza, the Children's Commissioner for England, reported that the number of children referred to mental health services reached more than 1 million people in England, a figure which has almost doubled since 2018 (De Souza, 2026). The BritishMedicalAssociation.org.uk (2026) expressed that 'The Government must urgently address that demand for mental health services.' (para. 7), reporting that the prevalence of mental disorders in adults in England sits at 22.6% in 2024. One in six children suffer mental health concerns aged between eight and sixteen, increasing to one in four aged seventeen to nineteen. The concept of positive health and wellbeing is subjective (Smith, 2008; Lancet, 2009; Vermunt *et al.*, 2018). Huber *et al.* (2011) asserted that having a positive mental, physical and social state of wellbeing all the time is extremely unlikely. Huber *et al.* contend that being more inclusive by considering individual perspectives on wellbeing should be considered when evaluating levels of health and wellbeing. The trends found in raw data presented in

many studies (Elwell-Sutton *et al.*, 2019; Ceely, 2022; ONS, 2023; Murray, 2023) are difficult to ignore and point to a deterioration in the nation's overall health and well-being.

Coinciding with this perceived mental and physical health crisis in England, research suggests that human interaction with outdoor, natural environments is also waning. Richardson *et al.* (2026, in Office for Environmental Protection, 2026, p.18) declare that 'The UK is one of the most nature-depleted countries in the world and has one of the lowest rates of nature connectedness'. Other research contends that modern children spend less than half the time outdoors as their parents (Press Association, 2016 in Selden, 2024). Clements (2004) also asserts that children play outside considerably less than their parents used to. Kellert (2015) suggested that children in the USA now spend 90% of their time indoors. The Office for Environmental Protection (2026) also found a downward trend in the number of visits and time spent outdoors, as well as a drop in pro-environmental behaviours from 2020 to 2024. Recent, prominent research advises that the United Kingdom, as well as other nations in the Western world, are spending less time in nature and therefore becoming less connected to nature. This is supported by findings collected in government initiatives, including a study by Natural England (2009a) finding that the majority of schoolchildren are rapidly losing their connection to local natural environments, reporting that less than 10% play in forests and woodland compared to 40% of adults when they were children. Natural England (2025b) found that less than half of adults feel closely connected to nature, and while visits to nature were somewhat frequent, they were of very short time periods.

Montana *et al.* (2023) question the ability to relate and equate the information collected across the 4 nations of the UK due to the differing methodologies of the studies. Montana *et al.* also questioned the 'awareness' (2023, p. 3) of policymakers as to how this type of survey data could be used to effect change. Studies performed by government organisations are useful in collecting data from many people in society and give much-needed information to policymakers. They lack in, and do not seek, the detail and nuance needed to provide an effective remedy for the downward trend in nature connection. As suggested by Montana *et al.* (2023, p. 20), these types of survey-style data collection techniques could be combined with other forms of data collection like 'interviews, ethnographic methods, social media scraping, as well as other visitor numbers using vehicle counters in public parks.' This is so results could be contextualised. It could be argued that more context given to the data, like that found in the Mosaic methodology, gives greater efficacy to the studies. The downward trend reported by these government studies and research articles in the time spent by people and children in natural environments is a viewpoint supported by many researchers (Soga and Gaston, 2016; Pergams and Zaradic, 2006; Ballouard, 2011; Natural England, 2009; Nature Scot; 2019a; Moss, 2012).

But why is this reported drop-off in the time children and adults are spending in nature a problem? Why are governments and academics concerned by the lack of contact humans are having with nature? Recent academic consensus affirms that contact with

perceived natural environments is positive for individual physical and mental wellbeing (Pryor *et al.* 2005; Dustin *et al.* 2009; Natural England, 2009; Moss, 2012; Hanson and Jones, 2015; Clark *et al.* 2016; Bento and Dias, 2017; Van Den Berg, 2017; Twohig-Bennett and Jones 2018; Lemmey, 2020; Martin *et al.* 2020; Mears *et al.* 2021; Moseley, 2021; Pirchio *et al.* 2021; Department for Environment, Food and Rural Affairs, 2023; Sun *et al.* 2023). Allen (2025) found that 91% of children agreed that nature made them happy. Also finding that 83% of children agreed that looking after nature was important. Kellert (2015) theorised that a disconnection from nature causes emotional, physical and intellectual delays in children's development. Health benefits gained from recreation in natural ecosystems contributed £508 billion in 2023 (Office for National Statistics, 2025).

The People and Nature Survey (Natural England, 2025a) has been running since 2020, involving 124,000 adults across England. The study aims to discover how nature affects adults in the UK by collecting survey-style data concerning how people engage with nature and how nature supports wellbeing. A headline finding from the study suggested that 85% of adults believe nature increases wellbeing. Natural England (2025b) also suggested that nature and or time spent outdoors in perceived natural environments is positive for perceived human wellbeing (Pyle, 1993; Brewer 2002; Louv, 2005; Clements, 2004; Dustin, 2009; Roberts, 2009; Moore, 2011; Martin *et al.* 2020; Shelldrake, 2020; Boileau and Dabaja, (2020); Pirchio *et al.* 2021; Dabaja, 2022; Selden, 2022; Sun *et al.* 2023; Dabaja, 2024). Contact with these types of environments would help remedy the mental and physical challenges as reported by (McGeeney, 2017; Bratman *et al.*, 2019; Ribeiro, 2021; NHS, 2024; British Medical Association, 2026; De Souza, 2026). However, Sugiyama *et al.* (2021) state that the type of previous experiences could affect individual perceptions of experiences in nature, with not all time spent having positive outcomes for perception or perceived wellbeing.

This Children's People and Nature Survey for England: 2025 (Natural England, 2025b) aims to collect views from children aged between 8 and 15 from an inclusive cross-section of society. The study reports results from a cross-section of age groups and ethnicities, as well as children who are living with a disability. While the study has lofty and well-placed aims, children who are diagnosed with additional learning needs are not referred to or targeted in the study; this is a glaring omission. The study also uses questionnaires which ask very closed questions and do not give space for any individual perspectives to be expressed. This study does not provide inclusivity for people from every demographic. For example, children with additional learning needs may communicate differently and need more support expressing their opinions. Another demographic excluded from the study was children under the age of eight. While the study is well-intentioned, it could be argued that this study doesn't serve the human rights of children to be heard as expressed in the United Nations Convention on the Rights of the Child (1997). Supporting the previous conclusion by Montana *et al.* (2023; Montana *et al.* 2026).

Despite the reported positive effects of nature, barriers to accessing nature remain. Natural England (2025a) found that ‘65% of non-visitors told us they would have liked to spend more time outside, but factors like bad weather, anti-social behaviour, and lack of facilities get in the way.’ (para. 9). Other studies reveal several reasons for this decline, including dependence on television and digital media, and concerns about crime and safety (Clements, 2004). Pergams and Zaradic (2006), in their study on the consistent fall in National Park visits, significantly correlated this to the invention of several electronic devices. They believed we are seeing the rise of videophilia, which is the human focus on sedentary activities using electronics. O’Brien and Murray (2007) affirm that time in the natural world is limited for children, due to modern concerns about safety, risk and blame. As with wellbeing, the concept of nature and what is nature is subjective. A park in an urban city is nature to some, whereas to others nothing short of an isolated mountain will do. However, research suggests that barriers to perceived natural spaces are real and must be overcome to effect individual nature connection (Brian, 2025; Keijzer, 2025).

‘the human costs of alienation from nature, among them: diminished use of the senses, attention difficulties, and higher rates of physical and emotional illnesses’

(Louv, 2005, p.41)

Disconnection from natural settings and related negative effects is not a new notion.

Image 1: Richard Louv's definition of Nature Deficit Disorder.

Richard Louv (2005) proposed the term ‘Nature deficit disorder’ (p. 41) with the definition seen in Image 1. With Selden (2024) calling for a ‘nature-child reunion’. With Louv concluding (p. 158), ‘If children do not attach to the land, they will not reap the psychological and spiritual benefits they can glean from nature, nor will they feel a long-term commitment to the environment, to the place. This lack of attachment will exacerbate the very conditions that created the sense of disengagement in the first place—fuelling a tragic spiral, in which our children and the natural world are increasingly detached.’ This assertion was supported by many (Pergams and Zaradic, 2006; Turtle *et al.*, 2015; Soga and Gaston, 2016; Selden, 2024), including Harris (2021), who suggested that this disconnection was at a time when the planet's ecosystems are under threat from decreasing biodiversity and climate change. Soga *et al.* (2016) stated, ‘ongoing loss of human interactions with nature, the extinction of experience, is viewed as one of the most fundamental obstacles to addressing global environmental challenges.’ Also, Richardson *et al.* (2026) surmised that ‘Nature connectedness is increasingly recognised as a causal issue in environmental crises and a powerful strategy for transformative change.’ Louv and his supporters (Pyle, 1993; Lemmey, 2020; Richardson, 2026) advocate for the theory of biophilia, where humans have a biological kinship with natural places (Roberts, 2013). With immersion in nature vital for connection to nature to be made and, therefore the caretaking of nature to take place, as Pyle declared (1993 in Moore, 2011), that it takes close contact with a place to realise it really matters.

Roberts (2013, p. 217) does question the absoluteness of Louv's theories. She ponders: do humans need total immersion in nature to become connected, or are there

'artistic' or 'spiritual' avenues that could achieve the same result? Roberts does raise a valid point. We are individuals with different perceptions, experiences, preferences, cultures, and, in the case of the present study, different ways of thinking, ranging from so-called neurotypical to so-called neurodivergent. Do all humans need the same types of immersion, the same experiences? Would we all perceive the identical experiences in the same way? Surely the answer to these questions is no. We have different needs, desires and will perceive the same situation in different ways. A point seconded by Fuller (2007, p. 247), who implied that Louv's writings were full of 'nostalgia' and 'bias'. Bias towards certain activities in nature, contending that Louv has 'biases of how nature should be enjoyed come through. He is very big on children building tree houses, very down on ATVs'. Both reviews by Fuller (2007) and Roberts (2013) maintain that Louv is correct in his Nature deficit disorder convictions. They do, correctly, raise the question of how individuals with unique perspectives should experience nature is not universal to all (O'Brian and Murray, 2007). This assertion is supported by Selden (2024), who asserted that vicarious experiences of nature through narratives set in nature, like *The Lion, the Witch and the Wardrobe*, can also be helpful in reducing nature deficit (Soga, 2016). Brewer (2002) raised a valid point, contending that finding relevant ways to help people reconnect to nature is one of the most complex challenges of the modern age. Could the same experience connect one individual to nature and simultaneously push another individual further away?

Louv (2005, p. 61) suggested, 'increased awareness of nature's power to improve physical and emotional health should also guide the way classrooms are conceived, houses built, and neighbourhoods shaped.' Kellert (2015) also indicated that the environments that children frequent are largely artificial and recommended a return to a more biophilic design where nature is incorporated in spaces that people encounter. If physical infrastructure is to be developed utilising 'nature's power', then why should educational settings and their curricula not seek to align with nature and benefit from its positive effects? Louv (2005, p. 197) maintained that nature-based and experiential learning is not a new notion, citing John Dewey and his assertion that schools should seek to immerse students in the local environment. As well as Howard Gardner's theory of multiple intelligences and the weight this theory gave to the vision of learning in the outdoors in the 1980's. Selden (2024, p. 451) claimed that, 'Louv suggests that developing this sense of joy and wonder associated with nature is essential for both proper child development and a proper pro-environmental attitude, and its absence from current educational practices will only become a more critical issue in the coming years as the effects of climate change become more pronounced.' In recent years, in the United Kingdom, Forest Schools have grown in prominence and popularity (O'Brien and Murray, 2007).

Harris (2021), when studying the effects of Forest School on pupils, concluded that regular sessions in a natural setting had numerous positive outcomes, including relaxation, developing a connection to nature, a sense of ownership and increased concern for the site. The study collected data from interviews with Forest School leaders, so the outcomes could be questioned as to the bias or self-interest present in the responses. O'Brien and Murray (2007) contend that regular interaction in a Forest

School setting can positively affect ‘confidence, social skills, language and communication, motivation and concentration, physical skills and knowledge and understanding.’ Also reporting that time spent in a Forest School setting produces a ‘ripple effect’ where children take their enthusiasm home and encourage families to be outside more often. These studies are supported by other research that attribute positive outcomes to time being spent in nature, particularly the success of the Forest School methodology (Brewer, 2002; Louv, 2005; Selden, 2024). Turtle *et al.* (2015) found that children who spent more time in Forest School sessions presented themselves as having more pro-environmental attitudes. The Forest School Association (2025) states that ‘Forest School is a child-centred inspirational learning process that offers opportunities for holistic growth through regular sessions.’ (para. 1). Forest School has an adaptive philosophy where facilitators listen to students and adapt sessions to the interests of the group. They also assert that ‘Forest School inspires a deep and meaningful connection to the world, and an understanding of how a learner fits within it.’ (para. 3). With this intention from the Forest School ethos, knowing how to gather perceptions and feedback from the participants is vital so that nature connection is nurtured.

Individual perceptions and experiences of nature are vital when hoping to increase the time people spend in nature and therefore their connection to nature (NatureScot, 2021; Brian, 2025; Keijzer, 2025). This time and connection to nature give improved perceived individual wellbeing as well as planetary wellbeing. Collecting the perceptions of individuals through pupil voice is a way of ensuring that experiences in nature are positive for children in our schools. With children who have a disability are reportedly more likely to spend most of their time in nature at school than children with no disability (Allen, 2025). It’s essential that facilitators inform their practice. But what is pupil voice? How can we collect it appropriately and effectively? The next chapter will explore this concept.

2.3 Pupil Voice

Pupil voice has grown in prominence since the United Kingdom signed the UN Convention on the Rights of the Child in 1989 (Rubenstein *et al.*, 2022; Littlefair and Jopling, 2026). Littlefair and Jopling state, ‘The right of the child to have a voice, to be heard and participate in decision-making regarding areas that affect them is enshrined in the Convention’. Lundy (2007, p.927) cites the exact points in the article as seen in Image 1. Littlefair *et al.* (2024, in Littlefair and Jopling, 2026) state that ‘Pupil voice is important, and pupils have something to say’. This is the view taken by the majority of education professionals in practice today (Ruddock and McIntyre, 2007; Lundy, 2007;

‘1. Parties shall assure to the child who is capable of forming his or her own views the right to express those views freely in all matters affecting the child, the views of the child being given due weight in accordance with the age and maturity of the child.
2. For this purpose, the child shall in particular be provided the opportunity to be heard in any judicial and administrative proceedings affecting the child, the views of the child being given due weight in accordance with the age and maturity of the child.’
(Lundy, 2007, p.927)

Image 2: UN Convention on the Rights of the Child.

Bloemart *et al.*, 2020; Cook- Sather, 2020; Rubenstein, 2022; The National Governance Association, 2023).

However, the motivation for why pupil voice is collected, the capability of some children to express constructive opinions, and the methods of data collection (Holdsworth, 2000; Bragg, 2007) are areas for debate and are causes for concern and suspicion for some facilitators. This section of the Literature review. We will focus upon what pupil voice is and why it is considered to be so important, as well as the research surrounding the methodological and ethical debate around collecting pupil voice.

The importance of collecting pupil voice is now commonplace in modern practice (Bloemart *et al.*, 2020; Cook-Sather, 2020; Rubenstein, 2022). Regulators also require and expect educational settings to collect and use pupil views to inform policy and practice (The National Governance Association, 2023). The Children's Commissioner, Rachel De Souza (2026), asserted. 'As I enter my final year as Children's Commissioner, one thing is clear: before we make decisions that affect young people, we need to listen to young people. Pupil voice is vital in the formation of curricula that institutions and organisations offer (Tisdall, 2008; Cook- Sather, 2020; Rouvali and Riga, 2021; Karlsen and Ohna, 2021; The National Governance Association, 2023; Rubenstein, 2022). The National Governance Association (2023) states, 'Effective pupil participation can support pupil success and wellbeing.' (para. 2). Lundy (2007) goes further, stating, 'Compliance with Article 12 will not only foster a positive school ethos and produce better citizens, it is a legal and moral imperative.' (p. 939). Pupil Voice, the collection of it and its importance to the formation of curricula and educational experiences, is by no means a new focus for researchers. In Rudduck and McIntyre's (2007) book, they indicate that pupil voice was vigorously collected as far back as the 1960's.

However, encouraging these points in the UN convention are and seemly empowering to the children it seeks to defend. Along with the current prevalence of the inclusion of pupil views in modern education. Ultimately, these rights are only granted to all if they are deemed appropriate to the individuals through the decision-making of power-holding adults. Terms like 'who is capable' and 'in accordance with the age and maturity of the children' allow ambiguity to be present (Lundy, 2007). Or as Lundy (2007, p. 397) maintained, 'The right to have these rights upheld was 'dependent on adults' perceptions of children's capacity and is what makes this aspect of Article 12 so complex.' Some maintain that the influence or motivations of the adults collecting the data and therefore responsible for implementing adaptations cannot be overlooked.

In reference to the methodological concerns surrounding pupil voice. Sloth-Nielsen, (1996 in Lundy 2006, p931) when addressing the terminology pupil voice, declared that overuse of this term was in danger of creating a 'chicken soup effect', where children's voice are considered 'unquestionably good' leading to difficulties when pupil voice may, 'challenge dominant thinking, generate controversy or cost money.' Supporting the assertions by Jopling and Riordan (2021) and Thomson (2011) in

Littlefair and Jopling (2020), that pupil voice is sometimes tokenistic with it having little to no impact on the practical experiences that children are taking part in, a point supported by other researchers (Hart, 1992; Holdsworth, 2000; Fielding 2001; Lodge, 2005; Cook-Sather, 2020; Karlsen and Ohna 2021; Lundy, 2007). It is possible that this tokenism is not due to any malicious motivation. It's possible that teachers are unsure of how to collect the data appropriately and are not suitably trained in how to use and implement this voice for the improvement of their provisions, as well as being unsure about the motivations of such exercises due to this lack of insight (Ruddock and McIntyre, 2007; Lundy and Kilpatrick, 2006; Bragg, 2007). This knowledge gap is thankfully being filled by organisations like UNICEF, which are now offering training in the methodology of collecting and using children's voices and opinions (UNICEF, 2026).

Fielding (2004) and Lodge (2005), in Littlefair and Jopling (2020), proposed that pupil voice is collected by teachers, analysed by teachers and manipulated by teachers to meet teachers' own desired outcomes. Fielding (2001) asserts that adults often do not understand or blatantly disregard the opinions of those they are responsible for. The notion of disregarding opinions should never be the case and should be guarded against. But the notion of misunderstanding opinions is harder to guard against. Researchers and facilitators must understand that in this type of analysis, researchers are inserting themselves, with their own experiences, ideas and biases, with secondary confirmation of opinions or further detail and nuance collected to create a full picture and give the researcher a more holistic, complete and valid view of the opinion collected.

Groundwater-Smith, Dockett, & Bottrell (2014, p. 132) advised that, in conducting student voice research, it is important to consult with young people who have engaged or will engage with the methods: 'Without such consultation, there is the risk that methods—however novel or well-intended— promote tokenistic, rather than genuine, participation.' These are confusing and worrying assertions, as it should be the researcher's responsibility to act ethically and with moral purity, as well as to be reactive in the data collection phase. Reactive in the sense that we must find ways to include and facilitate the inclusion of most, if not all, participants advocating for themselves. Agreeing with (Bruce, 1996) when she proposed that children are skilled communicators, and it is the adults' challenge to 'tune into' the child (Bruce, 1996 in Clark, 2001, p. 333). This point is relevant to children across the educational spectrum. This point is supported by Dimitrellou and Male (2020) and Cook-Sather (2020), as they state that research methods need to be mindful of the children's different contexts and individual vulnerabilities because of their age.

Lundy (2007, p. 929 and p. 930) maintained that pupil voice is either treated with 'scepticism about the children's capacity to have a meaningful input', 'worry that giving children more control will undermine authority' and 'finally, concern that compliance will require too much effort.' A point echoed by Bragg (2007) after a small-scale case study found that researchers must be mindful of the demands that pupil voice places on teachers. Teachers were sceptical regarding the efficacy of the responses children

gave and the change in power dynamics in the school. Leading the study to conclude that ‘teacher voice’ has to be developed alongside pupil voice for the dialogue to be truly meaningful within a whole-school situation” (p. 516). Lodge (2005) concluded that pupil involvement was problematic. Stating confusion over the motives of student involvement and to what extent students should be empowered to be involved in the running of their organisations.

Given the concerns, scepticism and cynicism of some, it appears that many of the difficulties with learning from pupil voice seem to arise when it is time for the adult to facilitate pupil voice collection and then implement the opinions that have been collected (Fielding, 2001; Lodge, 2005; Merrick, 2020). This is understandable and not something that should be used to criticise teachers, but a point for development and meaningful discussion (Fielding, 2001; Bragg, 2007). This meaningful discussion is something that could help support a positive and beneficial experience for both teacher and pupil. Thus, avoiding the loss of these lived experiences and subjective perceptions, which hold information and insight that give facilitators a window into the lives of the people who are the most important stakeholders in all our efforts, the children (Bragg, 2007). Training in appropriate methods of collection and in the reasons and necessity for pupil voice collection could help resolve many of these negative connotations surrounding the legal right of children to self-expression and influence.

Karlsen and Ohna (2021) advocate the use of Lundy’s (2007) model, which includes ‘voice, space, audience, and influence’ (p. 3). Are used to support the collection, recognition and implementation of the viewpoints of the children. Karlsen and Ohna articulate that the voice and space elements of the model refer to the pupil voice part of the scenario, with the audience and influence aspects referring to the analysis and implementation of the pupil voice collected. This analysis and implementation were referred to as student agency by Cook-Sather (2020), who drew the distinction between student voice being the sound of students speaking and student agency as having the power to influence practices. This distinction between student or pupil agency and student or pupil voice is a disputed one. Cook-Sather (2020) and Bragg (2007) maintain that just collecting the experiences of individuals is not enough; children should be engaged in dialogue and work in partnership to make decisions with facilitators. Holdsworth (2000) stops short of making that distinction, but while warning against the tokenism of collecting just voices, asserted that if viewpoints are collected, respected and then implemented, this is pupil agency. Holdsworth’s ladder of student participation is seen in Appendix 1 and outlines how the collection of pupil voice can be elevated to pupil agency and inclusion through 6 rungs. This can be implemented for every child if they are facilitated appropriately in communicating their experiences. This kind of model was also suggested by Lodge (2005). Lodge made the distinction between the children being passive sources of information and active contributors to the continued development of their experiences and organisations.

Analysis of the model created by Lundy (2007, p. 932), seen in Appendix 2, shows the 4 main elements explained in more detail, with the voice element being especially

pertinent to the current study. Lundy (2007, p. 933) stated, 'Space: Children must be allowed to express a view. Voice: Children must be facilitated to express their views. Audience: The view must be listened to. Influence: The view must be acted upon, as appropriate.' A similar model was proposed by Lodge (2005) that can be seen in Appendix 3. In reference to the present study, this model of pupil voice collection may be challenging for children you have additional learning needs, particularly the voice element. But as Lundy recommends, the children's 'voice' must be facilitated. A flexible and multifaceted methodology would support the inclusion of children with additional learning needs and thus maintain their human right to be heard. Drawing from all three models created by Lodge (2005), Lundy (2007) and Holdsworth (2000), the children must be included as much as possible in an active way to develop organisations and not treated purely as a data source. However, understanding Bloemert *et al.* (2020) assertion that even when children are only a data point is them being active, stating, 'Learners as data source, Learners in dialogue and Learners as initiators— each bring unique insights and should therefore be regarded as compatible rather than hierarchical.' (p.434) Again, this highlights the point where the researchers will need to be flexible in approaches and expectations of what children are capable of and how they can contribute without limiting their potential.

Bloemert *et al.* (2020) suggested pupil voice research has created three methodology types for voice collection. Pupils as a data source, pupils as dialogue and pupils as initiators. Pupils as a data source is widely considered to be a passive form of pupil voice, and therefore the results collected from this methodology are an invalid form of research and tokenistic. A point that Bloemart *et al.* challenged, and with good reason. If we return to the capability of the individual child we are working with, if they are capable of having a voice but not of engaging in dialogue or initiating the changes in their lived experiences, then this is surely better than having no voice at all. Again, we return to the facilitator's ability to be flexible and reactive to the individuals they are working with, without limiting their possible contributions. This assertion supports the four-stage model suggested by Lundy (2007).

If educational professionals disregard the rights of children and do not effectively implement strategies to include pupil voice in their everyday practice, then they run the risk of alienating pupils and creating a negative environment where children do not feel a part of and valued (Bloemert *et al.*, 2020). This positive use of pupil voice and/or pupil agency can also be a precursor to developing positive ideas and interactions with democracy and citizenship in later life (Hart, 1997; Holdsworth, 2000). As alluded to by Brooker (2002, p.171), 'unless adults are alert to children's own ways of seeing and understanding and representing the world to themselves, it is unlikely that the child will ever manage to identify with the school's and teacher's ways of seeing'. If the present study is alert and reactive to the children's abilities and individual ways of communicating, with them respect and given to their opinions through adaptations of experiences being made and then communicated to individuals, then pupil agency and not just pupil voice can be fulfilled to its maximum for each pupil and their capability (Hart, 1997; Bloemert *et al.*, 2020), avoiding the tokenism that is so often attributed to pupil voice. However, what does pupil agency look like for individuals who are

neurodivergent and/or have an additional learning need? What do facilitators need to consider when providing inclusion?

2.4 Children, Neurodivergence and Additional Learning Needs

The United Nations General Assembly (2003) includes the point seen in Image 3. This point is clear. Nations and the organisations within them have a moral duty to ensure that people with disabilities are free and supported in contributing to society where they see fit.

However, people who have an additional learning need (ALN) are a

widely excluded, ignored or underestimated section of society when it comes to academic research (Rogers and Boyd, 2020; Rouvali and Riga, 2020; Warren *et al.*, 2021; Friedman *et al.*, 2024; Hockey, 2024; Benstead and Sohdi, 2026). Friedman *et al.* (2024) specifically referenced an underrepresentation of children with an ALN being included in studies collecting perceptions and experiences from nature. Supported by Edwards and Bunn (2022), who suggested that opportunities for children with ALN to express their opinions are often not equal to those of their mainstream counterparts. Cook-Sather (2020, p. 188) claimed that excluding children with ALN from such studies 'has implications for all students, but again, it is particularly important that students who have been traditionally underrepresented and underserved'. Lundy and Kilpatrick (2006) performed a far-reaching study of pupil voice in Northern Ireland and, amongst other findings, concluded that there 'was the inadequacy of provision for children with special educational needs' (p. 58). The collection of pupil opinions was one of six areas of concern. Vincent and Benstead (2022) declared that even when children with an ALN are included in pupil voice research, some children within this community are marginalised, as research methods mainly include children who have traditional communication techniques. Mainly relying on the reading and writing skills of the individual, which excludes many children in this demographic (Sharma, 2022). Parker and Lynn (2002, in Cohen *et al.*, 2017) support this assertion when they argue that minority groups are often not included in research because they are not important enough to be a subject of research or if they are included, inappropriate methods are often used to collect data.

This is not a situation that can be part of an inclusive society that seeks to support individuals who are in this demographic. Kelly (2007 in Cohen 2017) argues that

The purpose of the Rules is to ensure that girls, boys, women and men with disabilities, as members of their societies, may exercise the same rights and obligations as others. In all societies of the world there are still obstacles preventing persons with disabilities from exercising their rights and freedoms and making it difficult for them to participate fully in the activities of their societies. It is the responsibility of States to take appropriate action to remove such obstacles. Persons with disabilities and their organisations should play an active role as partners in this process'.

(The United Nations General Assembly, 2003, para. 15)

Image 3: United Nations General Assembly Equality and Inclusion

researchers cannot exclude children with disabilities because they are a challenge to conventional methodologies. Notwithstanding that, this practice is in contravention of the United Nations Convention on the Rights of the Child (1997), which states that children with disabilities have the right to contribute to society. This point is continued by Lundy (2007, p. 934), who stated, 'that children's right to freedom of expression includes a right to impart information 'either orally, in writing or print, in the form of art, or through any other media of the child's choice'.' The UN convention does state that those who are 'capable' should have the right to self-expression, which may be an easy out for some. But as Lundy (2007, p. 935) maintains, 'While there may be an element of uncertainty about what constitutes the capacity to form a view', 'It is dependent only on their ability to form a view.' (Henderson-Dekort, 2022). Bloemart *et al.* (2020) were correct when they maintained that excluding the voices from research will ultimately give an incomplete picture and therefore affect the validity of such studies and given the distinct lack of research that points to the required inclusion of children with ALN in academic research, this is an area for further research and discussion. The children's right to express whatever communications they wish is fundamental to living in an inclusive democracy.

As discussed previously, nature and exposure to the outdoors are positive for perceived physical and mental wellbeing. But how are people with ALN or who are neurodiverse affected by nature? Matuskey *et al.* (2024) asserted that people who have an Autism Spectrum diagnosis have a lower density of synapses than those who are deemed neurotypical. Meaning that neurodivergent individuals have physical differences from those deemed neurotypical (Koc, Kalkan and Bilgen, 2023). A different way of data collection may be appropriate to suit everyone who is neurodivergent instead of using the same methodologies used for neurotypical people (Vincent & Benstead, 2022). However, the causes of autism are not yet known (Koc, Kalkan and Bilgen, 2023), so attributing the cause of autism to these physical differences is an educated assumption and not all additional learning needs are due to an autism diagnosis. As asserted by Hull *et al.* (2017), this type of research is still in its infancy and has many potential unanswered points regarding the data collected, stating that 'results may be attributable to the age and sex of participants included, designs of the resting-state scan, and to the analysis technique used to evaluate the data' (p.1). There are also ethical concerns regarding this type of research, as outlined by Sader *et al.* (2024), when they question the efficacy of using MRI techniques to collect data from Autistic individuals, asking, who could reasonably expect an autistic individual to tolerate an MRI scan without any kind of effect on the data collected? However, to include all individuals in activities, whether they are neurodivergent or have an additional learning need or not, individuals require adaptations to suit their needs and preferences and collecting pupil voice is no different.

If all voices are facilitated to express experiences and perceptions in nature, we will be able to support these individuals more. Methodologies such as the Mosaic approach (Clark, 2001, 2003, 2005, 2010; Rogers, 2020), the Hear My Story Mechanism (Benstead and Sohdi, 2026), multi-sensory semi structured interviews (Hockey and Dawkins, 2024; Dimitrellou and Male, 2020) and other 'child friendly'

methods of communication (Henderson-Dekort, 2022) can be utilised to provide the inclusion that all children deserve. It is the researchers' and responsible adults' responsibility to design, implement and review appropriate methodologies so that everyone can be included in the design of experiences at every level of society.

Research provides evidence that time outdoors in perceived nature is good for subjective overall human wellbeing and can foster a positive environmental attitude. Forest school is a positive and valuable opportunity for children to have access to these experiences. Research suggests that people also experience the world around them in different ways and will require different considerations, so that experiences can be universally positive. To ascertain what individuals require for a positive experience to occur, pupil voice or pupil agency can be a very powerful tool for inclusive organisations as they seek to provide a child's human right to self-expression and inclusion in the decision-making process. There are barriers and hurdles to overcome regarding the collection and analysis of pupil voice, but with a reactive and flexible methodology for data collection, all pupils can be included in the society around them with the correct support and the maximum of the child's ability. Lastly, children with additional learning needs are an underrepresented demographic when it comes to academic research and pupil voice collection. They deserve to be given equity and equal opportunity to express themselves in whatever way they see fit, and it is the facilitator's role to find appropriate ways to provide inclusion. This can be achieved through different semi-structured, flexible, multifaceted ways of communication and methodologies that suit individuals. This study will utilise one of these methodologies, as it could provide an appropriate way for the children to express their perceptions. Specifically, an adapted Mosaic approach to data collection. The methodology and research design being used to both collect data and analyse data will be explained in the following chapter.

2. Methodology and Research Design

The following the critical evaluation of research presented in the Literature review, current research suggests that pupil voice is a right of children and young people (Littlefair and Jopling, 1989) and that individuals with disabilities and additional learning needs are often overlooked or not included in educational research, with their opinions, perspectives and lived experiences often not considered (Rouvali and Riga, 2020; Rogers and Boyd, 2020; Warren *et al.*, 2021). This lack of pupil voice will directly impact the design of curricula as well as the pedagogies employed in delivering such curricula. This study's aim was to collect the perspectives of children, carers and facilitators regarding the effects that time in natural environments has on children with additional learning needs. Positive and negative effects were collected to form a holistic picture of the children's perspectives and lived experiences. If these perspectives and lived experiences can be collected in a way that allows children to advocate for themselves, then educators and facilitators can be better prepared when designing and delivering experiences. This ability to have a voice in the formation of educational experiences supports the United Nations Convention on the Rights of the Child, which the United Kingdom signed in 1991 (Crutchley, 2017).

This chapter outlines the study's overall research strategy, the relevant research paradigms, how data was collected, how the data was analysed and why the data was collected and analysed in this way. Potential limitations or challenges that this research design encountered will be discussed.

3.1 Research Strategy

The perspectives of the carers and facilitators were collected to form a full picture of the positive and negative experiences from time spent in nature for each subject. As well as the influences that the children will be exposed to when forming their own perspectives and what is influencing the experiences being provided to them. In a previous small-scale study (Bradney, 2024), it was suggested that many of the romantic responses and observations collected may well be due to 'masking', a situation where children with an Autism Syndrome Diagnosis will present and respond in a way they believe they are expected to present (Venkatesan and Tolani, 2024; Wise, 2023). As Cook *et al.* (2018) expressed, 'the concealing of deficits to conform to social group norms' (p.303). So much so that masking may be the cause of deteriorating mental health in some individuals (Miller *et al.*, 2021; Lei *et al.*, 2025). Perspectives of facilitators and carers were also collected to improve validation and add confirmation to the responses of the children.

As the study was seeking to gather the perspectives and lived experiences of individuals, qualitative data was collected. The study was pluralistic, using several different formats to collect data, particularly from the children involved. The research was founded in the anti-positivist approach to the social sciences and included parts of the interpretive and constructivist paradigms (Cohen, 2017), as the study sought

the individual perceptions of different situations and recognised that individuals may interpret the same occurrence differently. Phenomenology and ethnography (Cohen, 2017) were the basis for the research methodologies employed. Phenomenology was present as the phenomena of individuals' human experiences were being studied (Wojnar and Swanson, 2007) or as Zieske (2020) describes it as the study of subjective experience between the objects and environments with experience. English and English (1958) in Cohen *et al.* (2017), suggested that phenomenology is a theoretical viewpoint that promotes the study of direct experience and which sees behaviour being affected by the phenomena of subjective experience rather than by external, objective realities (p. 51). Many features found in phenomenology were utilised in this study; these include: 'An understanding of consciousness as active, as meaning bestowing.' 'The importance of documenting and describing immediate experiences.' 'A belief in the importance, and even the primacy, of subjective consciousness.' (p. 51).

Ethnography was also present as Harrison (2018) defines ethnography as it 'involves studying, describing, representing, and theorising (with a certain degree of particularity) a culture or social world.' (p.5). Something the study aimed to do as the researcher collected the data in its many different forms. Carers and facilitators were also asked to provide their perceptions and experiences of someone else's (the child's) interactions in the natural environment. De Wilde (2019) asserted that researchers who choose to utilise this approach aim to describe and understand the behaviours of individuals by observing their actions and interactions to understand how the world looks from their perspective. Cohen *et al.* (2017) went on to state that researchers 'cast their view over a wider range of social activity and seek to understand the ways in which people negotiate the social contexts in which they find themselves. They are concerned to understand how people make sense of and order their environment.' (p.53). Zenna Kingdon (2019) suggested that the ethnographic method could be used to describe the Mosaic method of research. Kingdon used the Mosaic method herself, concluding that the Mosaic method of data collection gave the children a way of advocating for themselves and gave the researcher a thorough understanding of the individuals lived experiences.

The research strategy used in this study is pluralistic, as qualitative data was collected in different forms and from different sources. This gave the study the flexibility needed to employ different elements of the Mosaic method of research and was the obvious fit in this context. The method of data collection that was employed is known as the Mosaic method. This will require myself collecting different 'tiles', with these tiles being assembled to form a whole, holistic understanding of the subject's subjective experiences. This method will be utilised as it has been cited as being successful in providing advocacy by other researchers (Clark, 2001; Clark, 2010; Baird, 2013; Botsoglou *et al.*, 2017; Henderson-Dekort *et al.*, 2022; Kok and Yang, 2022).

Alison Clark (2010), who has advocated the use of the Mosaic approach in the collection of data from young children, states that the Mosaic method 'brings together visual and verbal research tools' (p.115). And importantly allows 'children as active

participants in research' (p.115). Asserting that the Mosaic approach has become a way of allowing children to be 'experts in their own Lives.' (p.116). Offering (Clark, 2005) 'a range of multisensory means to communicate. These visual, spatial and physical tools should not be seen as a 'creative extra' but offer a challenge to the dominant learning styles that value verbal/linguistic skills at the expense of other means of communication.' (p.26). Something which was of vital importance in the present study (Langsted, 1994, p. 116 in Clark, 2010). Cohen (2017) referred to Parker and Lynn (2002), who claimed that educational research very often excludes people with additional learning needs and disabilities because they 'pose challenges to conventional research methods' (p.625). Many children with additional learning needs require different methods to communicate and advocate for themselves; this Mosaic approach gives them this opportunity and could remove many of the 'challenges' conventional research methods encounter.

Clark and Moss first used the Mosaic method in 2001 in a study designed to give children under five a way of expressing their perceptions of their preschool environment. Another important element of the Mosaic approach is that different modes are more accessible to some of the children than others. Clark contends that, 'It is unlikely that any one research activity or tool will be accessible to all young children with different skills, cultural backgrounds and personalities. This suggests the importance of a multi-method approach to be as inclusive as possible and 'play to young children's strengths'. (p.118). Supporting this, Lyons (2016) suggests there are many positives to multimodal research techniques, asserting that, 'Multimodal analysis offers a wealth of possibilities for the study of intercultural communication.' (p.278). The research contends that the Mosaic approach, with its multimodal approach to data collection and research philosophies, supported the children in expressing themselves, which is why the Mosaic approach supported this study's aims and objectives (Clark, 2001; Clark, 2010; Baird, 2013; Botsoglou *et al.*, 2017; Henderson-Dekort *et al.*, 2022; Kok and Yang, 2022).

3.2 Participants

To gather participants, 130 information letters were sent out along with consent letters to parents and carers. Twenty consent forms were returned. Members of the subject's class team were then approached, given information and asked to consent to their inclusion in the study. All parents and carers were given details of the study, which included the study's aims and methodologies. The study also followed the ethical code of conduct outlined by the University of Wales Trinity Saint David. This included, but is not limited to, anonymity of results, informed consent and the right to withdraw at any time without fear of consequence or without giving a reason. Children who participated in the study are pupils of the same Primary school that educates children with moderate and complex learning needs. The children were across Key Stages One and Two and were learning from both formal and semi formal curriculums. The children have access to outdoor areas in the form of playgrounds, a small Outdoor School and a Multi-Use Games Area. The school has 176 children on roll and is designated as a

school with high levels of deprivation. All children had Education, Health, and Care Plans (EHCP). The study included 5 females and 15 males.

3.3 Data collection

Considering all of the above, the tiles or sources of data that were collected in this study are the following. 1- Parent or Career Questionnaire (Available in Appendix 9), 2 – Facilitator/ Teacher questionnaire (Available in Appendix 8), 3- Child questionnaire (Available in Appendix 10), 4- Artwork (Available in Appendix 7), 5- Photo Tours (Available in Appendix 5), 6- Observations (Available in Appendix 6). An image of the data sources and the different tiles can be seen in Appendix 4. These sources of data helped create a holistic picture of the children's lived experiences and added validity to all the data collected. The parents and carers were asked to complete a questionnaire regarding their own experiences and perceptions pertaining to the children's experiences in natural spaces. These same questionnaires were given to one member of staff who works with the pupil. This was taken from a member of the child's current class team, being either a teacher or teaching assistant. Observations were made by the researcher during one of the children's scheduled Outdoor learning sessions. Child artwork was led by one request. 'Please could you make a picture of nature?' After the picture was completed, the children were asked, 'What have you made? Why? This was to add further detail and clarification to the children's opinions and to ensure that the work was the pupil's own interpretation of the term nature. Before the child started the picture tour, they were asked, 'Can you take pictures of nature?' When completed and the pictures collected, the children were asked, 'Why did you take this picture?' Finally, during the child questionnaires, the children were asked adapted questions taken from the previous parent-carer, facilitator-teacher questionnaires. The questions were adapted in real time to suit the pupil, with the pupil using any communication aid that they were familiar and comfortable with. It could be argued that this process produced a rounded, holistic and accurate set of qualitative data points that represent the pupils' lived experiences that are free from manipulation and influence as much as possible (Gilham, 2000; Patton 2002; Greenfield, 2011).

3.4 Data Analysis

The data collected were of a qualitative nature. Greenfield (2011) asserts that the Mosaic Approach supports qualitative analysis, and this process requires an 'interpretative process that began with data collection and continued until the conclusion of the research.' Denzin & Lincoln 2003, (in Greenfield, 2011, p. 115) state that this is 'a process of trying to blend and 'make sense of the various images, sounds, and understandings'. Data was interpreted by the researcher and went through an inductive analysis (Bryman, 2004; Patton, 2002 in Greenfield 2011), a thematic approach to data analysis. Themes were sort, firstly within each tile and secondly by comparing tiles within each subject and lastly across subjects. While the aim of the study is not specifically to find commonality within the subjects, the study does provide a valuable opportunity to garner knowledge of any commonalities that may exist. However, individuality was at the forefront of the study's analysis. The study was to

discover themes and consistencies within each subject's tiles to ascertain their true perceptions of nature. The aim of the study was to be able to provide recommendations for facilitators as well as parents and carers when they are designing and providing positive experiences in nature for children with additional learning needs. With the possibility of arming responsible individuals with a methodology for collecting valuable and accurate pupil voice from children with additional learning needs.

3.5 Limitations and Challenges

The Mosaic method, with its multimodal approach to data collection, presented several limitations and challenges to be addressed and overcome. Lyons (2016) states that multimodal data collection techniques raise many questions, including. How many tiles to use? As well as what tiles should be used? Lyons also suggested that consideration should be given to the amount of attention or importance placed on a particular tile, with this being difficult to equate. Lastly, Lyons (2016) suggests that this type of collection is also very time-consuming in its collection and analysis stages, as there are multiple sources of information from each participant.

Referring to the number of and which tiles were collected. The research was initially led by prior research that has proven successful in previous studies. Several studies have reported using photography, child-led tours, map making, interviews, slide shows of local natural places, audio recordings, journals, focus groups and observations to create their mosaics (Botsoglou *et al.*, 2017; Clark, 2001; Clark, 2005; Baird, 2013; Rogers, 2018). As Lyons (2016) previously suggested, the number of modes used will increase the time taken to collect and analyse data.

Next, referring to the amount of attention and importance the different modes or tiles will receive. The researcher used their own perceptions and interpretations of the data that was collected. This means that the researcher inserted themselves into the study and into how the data points were collected. The questions asked after some of the data points were included to increase the validity of the responses gained and how the researcher should interpret them; however, it was unavoidable that the researcher would be included in the production of this style of qualitative research. De Wilde (2019) suggested that researchers who undertake this type of research seek to understand people's everyday lives by observations and then engage in conversations to understand the individual's vision of the world. This means that the researcher is inserting themselves into the study and must be conscious and guard against bringing their own preconceived ideas and experiences to the study's design, data collection and data analysis. The researcher's current role as a teacher in the school where the children attend will play a factor in the study, with the perceived power imbalances that this brings (Ayrton, 2024 in Cyr and Goodman, 2024). Clarke (2005) maintained that these differences in status happen and are difficult to address, with adult expectations of young children influencing how they communicate (Cohen, 2017). This hurdle was overcome by the researcher holding to the guiding principle of the Mosaic approach, in that the children are active participants and take the lead in every step. In essence,

letting them take a controlling role in the data collection wherever possible. Greenfield (2011) has a strong argument when they stated, 'The Mosaic approach includes an element of role reversal for the adults involved. Children participate as documenters, photographers, initiators and commentators. Children play an active role, taking the lead in which ideas, people, places and objects are given significance.' (p. 110). Greenfield goes further to explain that the researcher must adopt the role of an authentic novice (Clark and Moss, 2005 in Greenfield 2011); this is a researcher who is genuinely seeking a child's perspective without any other motivations. Ayrton (in Cyr and Goodman, 2024, p. 191) states that researchers in any guise are a powerful presence and with qualitative research being a social phenomenon, the data collected will be affected by the presence of the researcher. Specifically stating that, 'Power is one of the most important concepts in social research' (p.191). And that power is 'an inescapable aspect of human existence and affects all relationships'. (p.192). Ayrton (2024) suggests the use of power-conscious practice; this 'involves active attentively and ethically toward power in researcher-subject relations.' (p.193) (Gaventa and Cornwall, in Bradbury, 2015, p.465). Cannella (2015) states that the researcher should act as a research instrument and avoid self-centred thinking when collecting and analysing data (Hordge-Freeman, 2018).

With the Mosaic approach implemented appropriately in an adapted and flexible fashion to meet the needs of the children, the result was a valid and reliable source of research that could potentially affect how pupil voice data is collected from children with additional learning needs and therefore influence how experiences, curricula and settings support these children in natural environments.

4- Findings

The objectives of the study were to collect the perceptions of nature from children with additional learning needs, their teachers or facilitators and their parents or carers. This was in an effort to give facilitators a holistic insight into the perceptions of this demographic of children so that positive outdoor experiences could be designed for the children to improve their connection to the natural world. A modified version of the Mosaic Approach to data collection was implemented to collect holistic data, relevant to the individual and accurate to the creator's intention.

Examples of each data source and the data collected can be found in Appendices numbered 5 to 10. All of the individual Mosaics with thematic analysis can be found in Appendices 11 and 12.

4.1 Overview of themes

These are the definitions of the main themes found across all twenty subjects utilising all 6 tiles of this modified Mosaic approach to data collection.

Positive- was derived from positive reactions to the natural stimulus or question. This may include calming, happiness, fun, smiling, laughter, etc.

Playing- was derived when play or games were mentioned in responses. This may have been activities with others or individually.

Plants- refers to plants, flowers, trees or bushes that were referred to.

Animals- refers to any animal, creature or insect that was mentioned, referred to or symbolised.

Explore- refers to the idea of the subjects finding new things or investigating a new space, area or item.

Sensory- refers to the idea of children reacting to the sensory inputs of natural environments.

Support- refers to when the children require or request support during one of the tasks or in the natural situation. This support may be very individualistic, with children requiring support for communication, emotional regulation, interactions with others, engagement in tasks, personal care, etc.

Colours- refers to the instance when colours are referred to, used or symbolised.

Outside- refers to the instance when the term or notion of outside was used or referred to.

Negative- refers to any negative state that causes a negative feeling or response. This could be due to weather, other people, sensory processing difficulties, disengagement, interaction difficulties, etc.

Adult Influence- refers to adult influences and their specific responses to how they perceive and react to nature

4.2 Thematic analysis for Tiles.

In each image, the blue shading highlights the prominent themes, with the darker blue highlighting the more prominent theme.

Themes	PL Playing Running, fun, Sensory play, solo, with other	SENS Sensory	HAP Happiness, Smiling, Laughter	EXP Exploration	INTER Interaction with others	SUP Support Communication, regulation, behaviour	UNHAP Unhappiness Fear, Unsure,	MUD Mud- Splashing
Subjects Grouping	C1, C8, C9, C13, C20	C2, C4, C9, C10, C15	C1, C5, C14, C20	C3, C4, C6, C11, C12, C13 C18, C19, C20	C1, C3, C4, C6, C8, C10, C12, C16, C18, C20	C1, C3, C7, C11, C12, C13, C14, C16, C17, C18 C19 C20	C1, C3, C5, C6, C7, C14, C16, C19, C20	C6, C11, C13, C16, C18, C19, C20
Total Mentions	4	5	4	9	10	12	9	7

Image 4: Theme Processing: Observation Tiles

In Image 4, the themes present are from observations completed for each participant in a natural setting on the school grounds. The prevalent themes are Playing (15), Happiness (12) and Support (10). The sensory theme was also prominent with a score of 9. Many children enjoyed being in the natural environment, with smiling, laughter, spontaneous play, and shouting being a common occurrence. One child was happily running and shouting throughout their entire 90-minute session.

Themes	ANI Animals/ Creatures	DISEN Disengaged	FL Flowers	TR Trees	COL Colours- relevant to subject created	HAP Happiness Excited, engaged	POSI Positive- Nice, Good, fun, calm beautiful.	SUN Sun
Subjects Grouping	C1, C8, C9, C13, C20	C2, C4, C9, C10, C15	C1, C5, C14, C20	C3, C4, C6, C11, C12, C13 C18, C19, C20	C1, C3, C4, C6, C8, C10, C12, C16, C18, C20	C1, C3, C7, C11, C12, C13, C14, C16, C17, C18 C19 C20	C1, C3, C5, C6, C7, C14, C16, C19, C20	C6, C11, C13, C16, C18, C19, C20
Total Mentions	4	5	4	9	10	12	9	7

Image 5: Theme Processing Artwork Tiles

In Image 5 are the themes prevalent in the Artwork tiles children were asked to complete. Children were asked to create a picture of nature and were given a range of artistic mediums. The prevalent themes were Happiness (12), Colours (10), and Positive and Trees, both with a score of nine. Many children engaged with the artwork task well, exhibiting their own creativity and understanding of nature. Two participants wanted to collect natural materials to include in their artwork, a creative way of showcasing nature. Many children commented on how nature made them feel happy or was a place for others to feel happy, with one participant stating, 'This is nature; it's a butterfly that likes the sun. Lots of colours and it's nice to be there with calm and colours.' Other participants found the task difficult to engage with and did not comment.

Themes	COL Colours	OUT Outside	PLAN Plant	MAN Man made item	TR Trees	POSI Positive Nice, Good, fun, great, peaceful	HAP Happiness (tech), engaged, excited	UNHAP Unhappiness Anger, Frustration, disengagement , Fear	ANI Animals/ Creatures	FL Flowers
Subjects Grouping	C1, C7, C14, C14, C19, C20,	C1, C3, C5	C1, C1, C2, C3, C3, C4, C5, C6, C7, C7, C8, C9, C9, C12, C13, C14, C15, C16, C17, C18, C18, C19	C1, C1, C2, C2, C3, C5, C6, C8, C11, C12, C16, C17, C18	C3, C6, C11, C11, C11, C11, C16	C3, C5, C6, C14, C14, C16, C16, C18	C5, C6, C7, C11, C13, C13, C14, C18, C18, C19	C7, C13, C14, C15	C7, C9, C10, C10, C10, C13, C13, C14, C18, C20,	C9, C9, C9, C13, C13, C14
Total Mentions	6	3	22	13	7	8	10	4	10	6

Image 6: Theme Processing Photograph Tiles

Image 6 shows the prevalent themes in the photograph tiles. Children were given a digital camera and asked to take pictures of their favourite natural places. The prevalent themes found are Plants (22), Man-made items (13) and Happiness (10). In follow-up questions, a participant stated, 'The sun is coming through leaves; it's pretty. The trees are noisy when they have leaves. It's a nice sound.' While the technology engaged others, it frustrated some, with some children not engaging with the task or not preferring this method of communication.

Themes	SENS Sensory	POSI Positive Calming/ Regulating	PL Play Games, Fun	TE Teacher enjoyment Calming, Fresh air, therapeutic , reset.	SUP Support/ Visuals, clothing	ACT L Active Learning Interaction, communication, Variety Activities	INT D Interaction difficulties	INT P Interaction Positives	HAP Happiness Smiling	ANI Animals/ Creatures	OUT Outside	EXP Explore	NEG Negative Weather, cold, rain, dirty	PLAN Plants
Subjects Grouping	C1, C1, C4, C4, C5, C6, C9, C11, C13, C15, C17, C19, C19,	C1, C1, C2, C2, C3, C4, C4, C7, C9, C9, C11, C11, C13, C13, C13, C14, C15, C15, C16, C16, C16, C17, C17, C18, C18, C18, C19, C19, C20, C20,	C1, C1, C2, C2, C2, C3, C3, C5, C6, C7, C7, C8, C9, C11, C11, C13, C13, C14, C15, C15, C16, C16, C17, C17, C18, C18, C18, C19, C19, C20, C20,	C1, C2, C3, C5, C6, C7, C8, C9, C11, C13, C15, C18, C20	C1, C2, C3, C4, C4, C8, C8, C9, C9, C19, C20,	C1, C3, C3, C4, C13, C8, C18	C1, C9	C7, C13, C16, C18,	C3, C5, C6, C7, C8, C13, C13, C14, C16, C18, C18, C20	C1, C3, C3, C4, C8, C9, C14, C15, C18,	C1, C5, C6, C9, C9, C11, C14, C16, C17, C18, C19, C20	C2, C2, C4, C6, C7, C8, C8, C13, C13, C14, C14, C15, C15, C16, C20	C2, C3, C5, C6, C7, C9, C9, C9, C11, C11, C14, C19,	C4, C7, C8, C13, C13, C18, C20,
Total Mentions	13	31	22	13	11	7	2	4	12	9	12	15	12	7

Image 7: Theme Processing Facilitator Questionnaire Tiles

Image 7 shows the prevalent themes from the Facilitator Questionnaires. Facilitators were given a questionnaire to complete independently. The prevalent themes found were Positive (31), Play (22) and Explore (15). Other common themes include Sensory and Teacher Enjoyment with scores of 13 and Negative, Outside and Happiness with scores of 12. One participant reported that, 'I think they (participant) really comes out of his shell when in natural environments. He is often more outgoing and socially active in the class group when outdoors'. Another facilitator reported that, 'The child's engagement is taken at their own pace; he may pause often to observe surroundings when experiencing unfamiliar surroundings.'

Themes	PLAY Play	EXP Exploring	POSI Positive Calming, Good	SENS Sensory	PCC Parent Carer Calming	NEG Negative Rain, heat, noise, people	OUT Outdoors	SUP Support	ACT L Active Learning	PL Running	ANI Animals	UNPRED Unpredictable	FOOD Food	PLAN Plants/ Trees
Subjects Grouping	C1, C5, C8, C8, C12, C13, C13, C13, C14, C14, C15, C15, C15, C16, C16, C18	C1, C3, C8, C8, C12, C13, C13, C14, C14, C15, C17, C18, C20,	C1, C2, C3, C4, C4, C4, C5, C5, C5, C7, C7, C9, C9, C10, C11, C11, C13, C13, C13, C14, C14, C14, C14, C14, C15, C15, C15, C16, C16, C17, C18, C18, C18, C19, C19, C20,	C1, C1, C1, C3, C4, C5, C5, C7, C9, C11, C12, C13, C13, C13, C14, C14, C15, C15, C19, C20	C1, C2, C3, C4, C4, C5, C5, C6, C7, C8, C9, C10, C11, C12, C13, C14, C15, C16, C18, C20	C1, C3, C4, C6, C7, C8, C8, C9, C10, C12, C12, C13, C14, C14, C15, C16, C17, C18, C19, C19, C20	C1, C3, C5, C7, C9, C9, C10, C14, C14, C20,	C1, C2, C5, C6, C9	C1, C6	C1, C5, C8, C9, C16, C17, C19, C19	C3, C4, C6, C7, C9, C11, C14, C15, C16,	C2, C10	C2, C9, C13, C16, C17, C19,	C1, C1, C3, C4, C5, C6, C11, C13, C15, C20
Total Mentions	10	14	35	20	20	21	10	5	2	8	9	2	6	10

Image 8: Theme Processing Parent/Carer Questionnaire Tiles

Image 8 expresses the themes from the Parent and Carer Questionnaires. The questionnaires were sent home to be completed independently. The prevalent themes found were Positive (35) and Negative (21), with Sensory and Parent and Carer Calming both scoring 20. Other notable themes include exploring, with a score of 14. One participant reported, 'My child responds positively when spending time in natural environments; he appears calmer when outdoors compared to highly structured settings, as being outside provides a sense of space and balance.' Conversely, one report stated, 'He has also gotten upset if there's noise that shouldn't be there. People

playing music or cars on the road by greenery areas. It's alien to (participant) and shouldn't be there'.

Themes	UN Unab le	PRES POS Presented Positive	PRES NEG Presented negative	SUP Support	SUP V Support Visuals	PLANT Plants	POS Positive	TRIP Trips	NEG Negative	PLAY Play	OUTSIDE Outside	FOOD Food	TOYS Toys	ANI Animals	COL Colours	TREES Trees
Subjects Grouping	C1, C2, C4, C5, C8, C10, C15, C17, C19	C1, C5, C8, C10, C15 C19	C2, C17	C9, C10	C1, C4, C10, C19	C1, C3, C4, C9, C13, C13, C14, C19, C20	C9, C11, C11, C11, C11, C12, C13, C14, C16, C16, C20	C13	C9, C11, C12, C13,	C9, C12, C16, C20, C20	C11, C11, C12, C14	C11	C11, C13	C13, C13, C13, C14, C18, C18	C11	C11, C13, C13, C18, C18, C20
Total Mentions	9	6	2	2	4	9	11	1	4	5	4	1	2	6	1	6

Image 9: Theme processing Child Questionnaire Tiles

Image 9 expresses the themes found from the Child Questionnaires. Children were supported appropriately to their developmental level, using their desired communication method. Where children were unable to answer questions, appearance and presentation were noted as a response. The prevalent themes were Positive (11), Plants and Unable both scores of 9 and Animals, Trees and Presented Positive all with scores of 6. Other notable themes include Play with a score of 5. Responses such as 'I like it' and 'Yes, calmer' were common. Descriptions of nature using animals and plants were another recurring subject. One subject reported, 'I like it. I like nature because I like flowers in nature. I like animals in nature.'

Table 1: Positive, Negative and Neutral Responses to Nature

	Positive	Negative	Neutral
Parents/carers	16	1	3
Children	17	3	0
Facilitators	13	1	4

Table 1 shows responses to the request asking participants to rate children's experiences and relationships in nature. Positive was the most common from all participants. With two omissions of missing data in the facilitators' responses.

Themes	Positive	Playing	Sensory	Plants	Colours	Outside	Animals	Support	Negative	Explore	Adult Influence	Interaction
Subjects with Present Themes	C1	C1	C1	C1	C1	C1	C1	C1	C1	C1	C1	C1
	C2	C2	C2	C2	C2	C2	C2	C2	C2	C2	C2	C2
	C3	C3	C3	C3	C3	C3	C3	C3	C3	C3	C3	C3
	C4	C4	C4	C4	C4	C4	C4	C4	C4	C4	C4	C4
	C5	C5	C5	C5	C5	C5	C5	C5	C5	C5	C5	C5
	C6	C6	C6	C6	C6	C6	C6	C6	C6	C6	C6	C6
	C7	C7	C7	C7	C7	C7	C7	C7	C7	C7	C7	C7
	C8	C8	C8	C8	C8	C8	C8	C8	C8	C8	C8	C8
	C9	C9	C9	C9	C9	C9	C9	C9	C9	C9	C9	C9
	C10	C10	C10	C10	C10	C10	C10	C10	C10	C10	C10	C10
	C11	C11	C11	C11	C11	C11	C11	C11	C11	C11	C11	C11
	C12	C12	C12	C12	C12	C12	C12	C12	C12	C12	C12	C12
	C13	C13	C13	C13	C13	C13	C13	C13	C13	C13	C13	C13
	C14	C14	C14	C14	C14	C14	C14	C14	C14	C14	C14	C14
	C15	C15	C15	C15	C15	C15	C15	C15	C15	C15	C15	C15
	C16	C16	C16	C16	C16	C16	C16	C16	C16	C16	C16	C16
	C17	C17	C17	C17	C17	C17	C17	C17	C17	C17	C17	C17
	C18	C18	C18	C18	C18	C18	C18	C18	C18	C18	C18	C18
	C19	C19	C19	C19	C19	C19	C19	C19	C19	C19	C19	C19
	C20	C20	C20	C20	C20	C20	C20	C20	C20	C20	C20	C20
Total number of Mentions	153	61	37	65	7	21	23	22	38	14	18	2

Image 7: Overview of the Core Themes and Subject Theme Location

Image 10 highlights the main themes present for each subject across all six tiles in the Mosaic approach for data collection. The yellow highlighting shows which themes were present for the subject. The image shows that the core themes found across all subjects and tiles were Positive (153), Plants (65) and Playing (61). Other notable themes include Negative (38), Sensory (37), Animals (23), Support (22) and Outside (21). Each Mosaic and the coding utilised can be seen in Appendix 11.

In the Discussion, the findings are analysed and assessed against the study's objectives, along with a reflection on the study's successes and limitations. The Discussion will explore the context of the findings, interpret what the main themes may imply, the possible consequences for facilitators, and how the findings compare with prominent research.

5. Discussion

The objective of the study is to collect the perceptions of nature from children with additional learning needs, their teachers or facilitators and their parents or carers. Further objectives of the study are to be able to provide recommendations for facilitators as well as parents and carers when they are designing and providing positive experiences in nature for children with additional learning needs. With the possibility of arming responsible individuals with a methodology for collecting valuable and accurate pupil voice from children with additional learning needs.

5.1 Overview of Findings

The findings suggest that this methodology of collecting perceptions from this demographic of subjects is effective and appropriate. The findings also potentially indicate that the most common themes in reference to the perceptions of nature for children with additional learning needs are that the subjects have a positive perception of nature (Forest School Association, 2025; Natural England, 2009a; Natural England, 2025b; NatureScot, 2021), that nature is a place for play and exploration and that the subjects perceive plants, animals and the term outside to be synonymous with nature (As seen in Image 9).

However, the findings suggest that any commonality should be treated with nuance, as different methods and adult child perspectives produced different understandings, suggesting every experience is individual to the person. The Negative theme was a common theme, suggesting that the subjects have several concerns or difficulties when they are experiencing natural environments. Other potential prominent themes include Sensory, Animals and Support. The data collected implies that concerns as well as the positive elements of the subject's perceptions, along with individual uses of nature and their ways of describing nature, appear to be highly personal to the subject. Analysis and possible interpretation of individual tile types are in Appendix 12. The individual Mosaics, with Analysis of each tile, are in Appendix 11. These Mosaics potentially show the possible perceptions and intricacies of each subject's experience of nature. The prevalent themes are shown, and the analysis of each subject's prevalent themes are presented. These individual Mosaics, along with the appropriate analysis, potentially show how influential this methodology could be in forming strategies and experiences for each child. These findings could contribute to the shallow research base regarding children with additional learning needs and their perceptions of nature and, more widely, the collection of their voices, and front-line inclusion in academic research (Rogers and Boyd 2020; Rouvali and Riga, 2020; Warren *et al.* 2021; Friedman *et al.* 2024; Hockey, 2024; Benstead and Sohdi, 2026).

5.2 Nature as an Individual Experience

The predominant findings of the study suggest that participants perceive nature positively, with nature being a place for happiness, calming, play (Forest School

Association, 2025; Natural England, 2009a; Natural England, 2025b; NatureScot, 2021) and beauty. The positive and calming themes were predominantly found in the questionnaire tiles being reported by the facilitators, parents or carers and the subjects themselves. These particular findings could be attributed to the romantic cultural construct that is prevalent in today's society. Potentially, the participants see nature as a benevolent force for good (Stone, 2005; Siegrist and Berthold, 2024; Burlingame, 2026) and that benevolent place must be positive to ourselves. However, this finding supports the conclusions in Allen (2025), who stated that 85% of adults find that nature boosts their happiness. With nature making us less stressed, energised and connected. This positive outcome also supports the findings of research, which reports positive outcomes referring to time spent in the outdoors. These positive outcomes included producing calming states and supporting emotional regulation. As well as the inducement of states of happiness exhibited by smiling, laughter and improved mood. The data collected, which can be seen in the individual mosaics, suggest that these experiences are, however, highly individual. The sense of well-being and positivity appear to be subjective and support the assertions of Smith (2008), Lancet (2009), Vermunt *et al.* (2018) and Huber *et al.* (2011). This finding of individualism has similarities to the contention made by Roberts (2013), who suggested that understanding of nature will be different for every individual. Children described nature in different ways throughout the different tiles, implying that perceptions of nature are different and mean different things for different people. The assertion could be made that the findings in this study are counter to the claims made by Louv (2005) and other like-minded authors when they affirmed that children require an intimate connection to a raw form of nature (Pyle, 1993; Lemmey, 2020; Richardson, 2026). The findings found in the individual mosaics suggest that people experience the same phenomena in different ways and would logically require different considerations to access and benefit from the same experiences. The findings from the present study could help to support the formation of these relevant and informed ways to reconnect all people to the natural environment.

5.3 Nature as a Context for Participation and Interaction

The study's findings also suggest that nature could be a place for change in participation and interaction status between subjects. Play, exploration, engagement and social interaction, both positive and negative, were prominent themes from the facilitator questionnaires and observation tiles. These noted improved interactions with others and motivations to play and initiate play type situations both independently and with others appear with other recent research (Brewer, 2002; Bratman *et al.* 2019; Boileau and Dabaja, 2020; Clark *et al.* 2016; Christens, Dabaja, 2022; Dabaja, 2024; Forest School Association, 2025; Harris, 2021; Louv, 2005; McMormick and Wolf, 2025; Natural England, 2025a; Natural England, 2025b; O'Brian and Murray, 2007). However, the possible negative findings are less reported in modern research. This may be because the reasons for negative perceptions or reactions are attributed to different elements, like other people's actions and sensory reactions, not specifically to the natural setting. For example, Sugiyama *et al.* (2021) asserted that negative perceptions of nature are influenced by the amount of previous time spent in nature and by the type of previous experiences had. Something the researcher in the present study may not have a full understanding of due to possible methodological

shortcomings, which could be overcome by collecting more background data from subjects or individuals influencing the subjects. These potential findings suggest that facilitators should give children the space and opportunity to explore and play with interaction opportunities planned for but not pressured, a pedagogy supported by the Forest School Association (2025). Regarding the negative perceptions of nature, it may be necessary for facilitators to collect more background data on the children they are responsible for. This would allow them to plan informed experiences. The methodology employed in this study could help support this.

5.4 Sensory Experiences, Regulation and Need for Support.

The findings possibly highlight the crucial point of how each individual child should be supported to access the environment around them, and this support frames the child's enjoyment of experiences in nature, and this ultimately frames their perception of nature. Support, sensory and negative themes were common across the population sample of the study. These findings were primarily found in the parent and carer questionnaire and the observation tiles. While the source of these themes is very individualistic in nature, supporting the findings of Webster and Blatchford (2019), Warren, Buckingham and Parsons (2021) and Rouvali and Riga (2021). Producing a possible assertion that nature can be both calming and overwhelming at the same time to the same or different individuals. The findings suggest that children, particularly those with additional learning needs, may require experiences that are more tailored, with more support present and experiences that are informed by their needs, concerns and difficulties as well as their interests (Roberts, 2013; Obrian and Murray, 2007; Selden, 2024; NatureScot, 2021; Brian, 2025; Keijzer, 2025, Dimitrellou and Male, 2020; Cook-Sather, 2020). Again, this may require a different kind of experience from the intimate experiences suggested by Louv. Experiences that speak to the individual interests of the child, which may include games or links to familiarities of the children. Also, using ways of supporting the children's sensory needs in the environments, along with any social, emotional or mental health needs, will also be paramount. This supports the contention made by Brewer (2002) that finding relevant ways to reconnect people to nature will be a complex challenge, but one that facilitators must rise to.

5.5 Rethinking Pupil Voice: Implications and Inclusive Practice

The study also potentially provides professionals with the ability to collect appropriate pupil voice, enforcing the children's legal and moral human rights to self-expression and self-determination (Rubenstein *et al.* 2022; Littlefair and Jopling, 2026). Agreeing with the assertions made by De Souza (2026), the National Governance Association (2023) and Lundy (2007) that all children are capable of contributing and expressing themselves to some degree, and that this opportunity is vitally important to all individuals. This study may also be an answer to the question of who is capable of commenting on their lived experience and the efficacy of the data collected by professionals, a concern raised by Lundy (2007). If this methodology, when adapted and improved, could allow all people to be heard and for everyone's human rights to

be upheld, then this could allow for a more authentic and fulfilling way of collecting voices and providing agency for all. In terms of adaptations and improvements, these would be centred around the support given to the children's ability to communicate and express themselves, which could be supported by ascertaining the child's needs and preferences prior to data collection. Talking mats and electronic communication devices could be used for children who prefer or require the use of them. Also, the researcher could be conscious of more subconscious forms of communication such as facial expressions, gestures or tone of voice, as this could support non-verbal individuals and provide inclusion in the collection of pupil voice. Where these findings could potentially contribute to the research base is that the results are largely from the child's perspective and taken from data they produce. Many of the studies only consult adults when collecting data. This study could also help to add accuracy and validity to further studies collecting pupil voice by providing inclusion for all people across schools (Bloemart *et al.* 2020). The findings of this study also support previous research (Hart, 1997; Holdsworth, 2000; Lodge, 2005; Lundy, 2007; Bloemert *et al.*, 2020; Karlsen and Ohna, 2021) that this approach to pupil voice collection can garner holistic, accurate and valuable pupil perspectives and communications.

5.6 Implications for Practice

The findings from the study could potentially impact the practice of the planning, delivery and reflection of outdoor experiences delivered to individuals, particularly individuals who are neurodivergent or have an additional learning need. In the planning phase, the children's prior experiences and perceptions, along with potential influences on these experiences and perceptions, would allow facilitators to make informed decisions regarding a raft of important considerations that could support the production of a positive experience in nature. These considerations would be individual to every pupil but could include possible triggers for dysregulation, sensory considerations in the outdoors, interests and dislikes, fears and enjoyments. As well as more logistical considerations like communication preferences, weather habits, and equipment sizes. During sessions, facilitators may consider the targeted support given to the children, how much freedom is conducive to the production of positive experiences for individuals, and modes of alternative communication being available. An important potential point raised by the data could be that facilitators must try to remove their own perceptions from the judgment and assessment of other individuals' reactions or actions in the natural environment. The facilitators themselves will have prior experiences influenced by culture and influential others that may lead them to imprint their own judgments on the actions of others; just because you perceive someone to be disengaged doesn't mean they necessarily are. In the reflection phase, after sessions, the collection of verifying data could help remove misconceptions and support the planning of future sessions. This could be done by comparing the perceptions of other facilitators, revisiting artwork or crafts produced, and gathering responses or perceptions from the participants. Essentially, collecting a type of pupil voice and reacting to the data collected, giving the subjects agency over their future experiences. Something a methodology like the one used in this study could support. Excitingly, if this methodology of collecting pupil voice is utilised in settings, then

potentially it gives facilitators the tools to deeply understand their pupils, their interests, likes and fears, their hopes and wishes. Vitally, it could give children who are often disregarded and ignored control over their lives. And why stop at using this methodology in schools? The potential uses in political, health and social care situations, to name just a few examples, could be empowering to the affected individuals.

5.7 Limitations

Throughout the study, a number of challenges and limitations are present that would need to be addressed to improve results and the efficacy of the results collected. A possible limitation concerns the role of the researcher in the study and the potential for bias to suit the researcher's own preconceived ideas and/or desires for the future of the school. A concern that was outlined by (Fielding, 2001; Lodge, 2005; Merrick, 2020) in the literature review when they talk about the weakness and tokenism present in the practice of pupil voice collection. Being conscious of my own role as researcher and the concerns outlined in the literature regarding pupil voice is an important prerequisite for anyone aiming to collect this type of data (Cannella, 2015; Ayrton, in Cyr and Goodman, 2024). Also, asking follow-up questions to ascertain the intention of the subject when producing some of the analysis will add an extra layer of accuracy during the data analysis phase, which will aid the production of accurate and intentional themes from the subject and further remove the researcher's bias. Using interviews instead of questionnaires would also collect accurate information from the participants and further remove any misconceptions on the part of the researcher. However, it is important to recognise that, however well-intended the motivations from the researcher and methodological improvements, another person is attempting to understand another's interactions and behaviours, which will always bring challenges in terms of researcher misconceptions and ethical concerns (Gaventa, J. and Cornwall in Bradbury, 2015; Hordge-Freeman, 2018). If an institution aims to collect the voice of its pupils, it may wish to task an external individual to collect and analyse the data, as this would eliminate the risk of bias in favour of the institution.

Other limitations of the study came in the form of a logistical point of view. Data collection was extremely time-consuming and difficult to achieve across a relatively small population. Giving questionnaires to parents, carers and other professionals who are all extremely busy in their day-to-day lives is a difficult thing to ask, and the collection of questionnaires was understandably difficult and took time. Supporting the communication needs of the children when answering questions and giving comments to their different tiles is something that would require more planning and time to achieve appropriately for every subject with differing preferred means of communication. Gathering prior information about the subjects prior to data collection would mean that the researcher could prepare to ask questions and receive answers in their preferred mode of communication.

A nuance of the Mosaic approach to data collection is that different tiles are more likely to produce certain themes. For example, the art tiles are more likely to produce themes

surrounding colours or items found in nature. This requires a different way of interpreting the data, placing importance on the follow-up questions being included to add context. It may also be important to interpret the overall data collection across the population with an understanding that some themes may be more inclined to certain tile types. Meaning that when researchers or teachers analyse the data collected, the number of occurrences of a theme doesn't necessarily mean that theme should demand the most attention on the part of a facilitator when planning for a positive experience in a natural setting. A suggestion supported by Clark (2008), who concluded that certain creative tiles were conducive to producing more intimate and personal outcomes, while more procedural tiles were conducive to producing broader, more generic data. Again, Alison Clark asserted that Photography tends to produce data that highlights objects and spaces Clark, in Lewis *et al.*, 2004). Clark (2005) asserted that this was an actual strength of the methodology, as this gave children the ability to layer their communication or to add other meanings to their perceptions through different ways of communicating. Suggesting that the different tiles are ways of asking different questions that would, in turn, produce different answers that may lead to certain outcomes for the individual.

5.8 Recommendations for Future Research

An unanswered question that could be important for facilitators is the source of the subjects' positive or negative perceptions. The idea that neurodivergent individuals may mask their responses to fit societal and previously learnt norms is one that could hide true perceptions and thus hinder the formulation of positive experiences. The study fails to understand where these influences could originate and only hints at the opinions of the influential people surrounding the subject. More in-depth, open-ended interviews with possibly more targeted questions could help to gather more information and help to uncover any possible masking behaviour. A very interesting and important point for further research. Another point of further research could be the use of an external researcher. An external researcher completing the data collection and analysis phase would eliminate any negative effects of perceived power imbalances and remove concerns about possible bias. Studies that take heed of the possible methodological improvements would also be a worthwhile pursuit. For example, improving the prior knowledge of children regarding their prior experiences, needs and communications would be highly beneficial and potentially produce detailed and rich data. A longitudinal study delving deeper into the reasoning and the motivations for the responses of all participants would add efficacy to the study and possibly help to ascertain if the subjects were masking during any of their communications. In the Conclusion chapter of the study, the value of this study will be assessed and discussed.

6. Conclusion

The objective of this study is to collect the perceptions of nature from children with additional learning needs, teachers or facilitators and parents or carers. The reason for this is to produce a holistic and accurate picture of the children's perspectives so that parents and carers, as well as facilitators, can design informed experiences in nature. Humans living in our modern world have steadily become disconnected from nature to some degree, and the symptoms of the 'Nature Deficit Disorder' (Louv, 2007) are appearing more widespread with the increase in negative mental health conditions, faltering physical health in larger proportions of society and the continued destruction of our environments and ecosystems. If children could have positive experiences in nature, helping them to reconnect with nature and supporting them to gain the individual benefits of time spent in natural environments, as well as benefiting society and nature in turn. The further objectives were to suggest to responsible individuals a methodology that could help them to collect, analyse and implement the pupil voice of the individuals they are responsible for, creating pupil agency for all, no matter their learning needs or communication preferences. In turn, granting all individuals their lawful and moral human rights to self-expression and inclusion in experiences they are living. This study aims to show that there are ways to include all children to some degree.

The key findings of the study were that children with additional learning needs perceive nature positively, as a place to play and be happy. They also perceive plants, animals and the term outside as descriptors of natural places. Negative perceptions were also present, with sensory needs, both positive and negative, being an important element of experiences along with the support the subjects receive. The findings also suggest that each perception of nature in an individual has nuances surrounding positive, negative, sensory, support and interaction needs for each subject. An interesting methodological finding pertains to the mosaic tiles and then thematic analysis, which is an important consideration for any person wanting to utilise the method. Each type of tile tends to produce certain types of data. Photographs produce themes centred around items; artwork around colours and objects; and observations around movement or activities. This is an important consideration as researchers or facilitators will analyse and deduce meaning from these tiles and must be conscious of the tiles' potential theme bias. The questionnaire tiles also produce interesting themes from all three sources that again must be treated with consideration and/or caution. The facilitator, parent carer and subject questionnaires produced themes that could stereotypically and culturally be related to the individual and their role. The facilitator themes were positive, play and explore. Potentially themes that a facilitator may be expecting or more inclined to witness? The parent and carer themes were positive, sensory, parent/carer calming and negative. Again, themes that could stereotypically be related to this demographic and the romantic cultural influences they have been a part of, as well as the concerns that any responsible carer would notice regarding negative experiences and sensory effects. Lastly, the Child questionnaires potentially parrot the positive themes found in the facilitator and parent/ carer questionnaires and

then refer to descriptive themes such as animals, plants and trees. Responses that stereotypically could be related to this neurodivergent demographic.

Further findings are that this type of methodology for collecting pupil voice is appropriate, accurate and practically useful in understanding the perceptions of children with additional learning needs.

The study highlighted several recommendations for policy makers, facilitators, educational professionals and researchers to consider. Particularly the importance of pupil agency, with the aims and motivations behind its collection explained to the individuals tasked with collecting it. Secondly, funding and time must be given so that meaningful pupil voice can be collected from all individuals in the organisation using the appropriate methodologies for that individual. For this to happen, time, funding and training are required, and that can only be achieved with the appropriate leadership. Regarding facilitators, the motivation and determination for utilising the information collected from pupils is paramount in providing pupil agency that has real and long-lasting impact. Facilitators also must realise that the level of inclusion greatly depends on their conduct and how they support children to communicate, how the communications are analysed and interpreted and how they are implemented and reflected upon. Facilitators are at the forefront in providing inclusion and upholding the rights of the children they represent. Regarding research, the methodologies that are employed to collect pupil voice are an area for refinement and further study. Further research is needed into how children with learning needs form perceptions and further insights into the possibility of masking being present in the formation of these perceptions. Research pertaining to neurodivergent individuals and individuals with a learning difficulty in every facet of society should be more commonplace.

The impact of this study is that it provides responsible individuals with a way of collecting detailed voice and providing life agency to all. The study supports the positive effects nature has on individuals and reports individual nuances in perceptions and perceived needs to produce positive experiences. Conversely, the study does raise considerations surrounding the types of data collected in each data set and the sources or even efficacy of the of responses collected in questionnaire-type tiles. A point that would require further research.

The significance of these findings is that children with additional learning needs can be included in pupil voice collection data with an adapted version of the Mosaic approach to data collection being used as the vehicle. This allows every individual human right to be upheld and solves the confusion about who is capable of expressing their opinions about their own lived experiences and consequently contributing to further experiences. These findings give facilitators and education professionals the ability to collect pupil voices from every pupil and the opportunity to provide pupil agency to every child they are responsible for. Helping create experiences that aid children in reconnecting to nature for the benefit of themselves, the planet and ultimately everyone in society.

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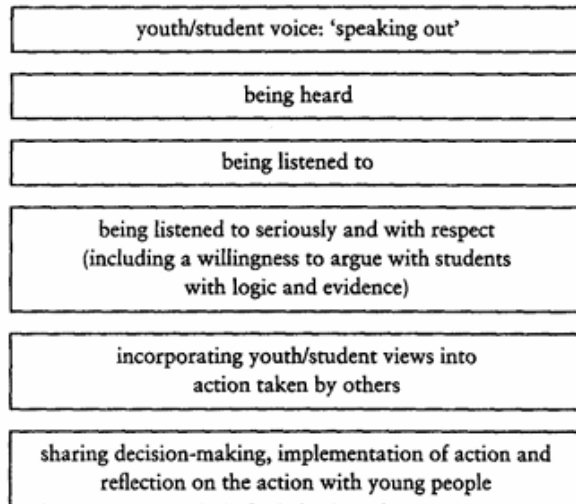
Artificial Intelligence Acknowledgement

Grammarly was used to suggest corrections for spelling and grammar errors.

Appendix 1: Holdsworth's Student Participation Ladder

Holdsworth, R. (2000). Schools that create real roles of value for young people. *Prospects*, 30(3), 349–362

FIGURE 1. Student participation ladder



Holdsworth's student participation ladder. Outlines the different levels of pupil voice that researchers can support and how their considerations and methodologies can support different levels of pupil voice and pupil agency. This model supported the formation of the current methodology through highlighting the role of the researcher and the impact they have on the study's efficacy, avoiding tokenism.

Appendix 2: The Lundy Model of Student Participation

Lundy, L. (2007). 'Voice' is not enough: Conceptualising Article 12 of the United Nations Convention on the Rights of the Child. *British Educational Research Journal*, 33 (6), 927–942.

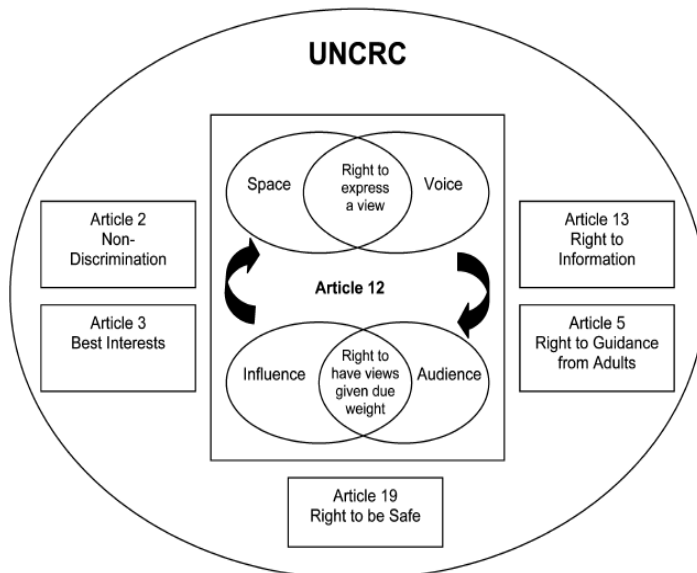


Figure 1. Conceptualising Article 12

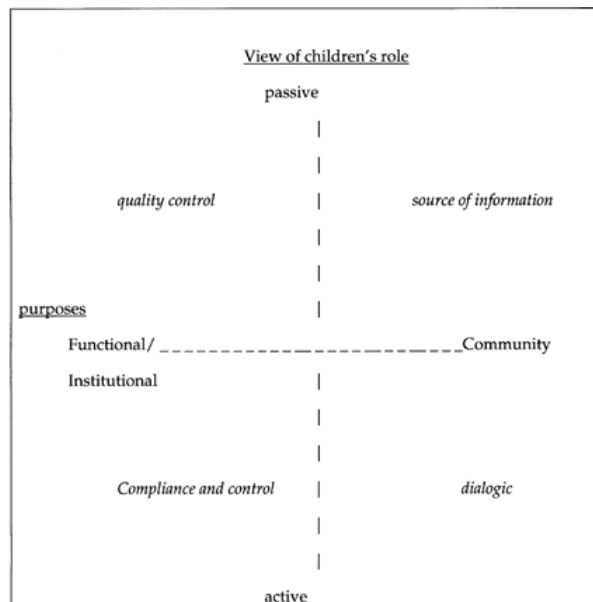
This model was used in the study as a reference point for formulation of effective, appropriate and ethical pupil voice collection. Giving guidelines for effective methodology but also shows the rationale in terms of the legislation this model supports. The Ideas expressed here were utilised in the data collection phase. Giving space, supporting the voice, being an active listener

and using the voice were all elements utilised in the study to provide the subjects with agency.

Appendix 3: Lodges Approach to student involvement in school improvement.

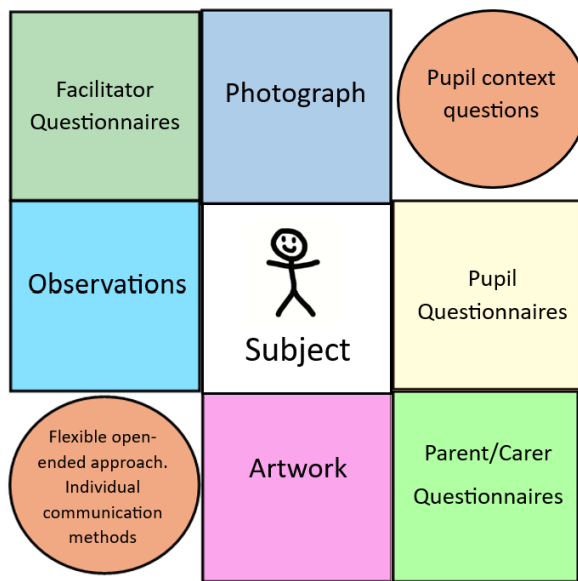
Lodge, C. (2005). From hearing voices to engaging in dialogue: Problematising student participation in school improvement. *Journal of Educational Change*, 6, 125–146.

TABLE I
Approaches to student involvement in school improvement



Lodge's model influenced the present study by highlighting the children's role and how vital it is that the subjects play an active role in the research to produce an effective and meaningful version of pupil voice and therefore provide pupil agency. The model also suggests how the active role should be utilised through a dialogic method type instead of a prescribed method.

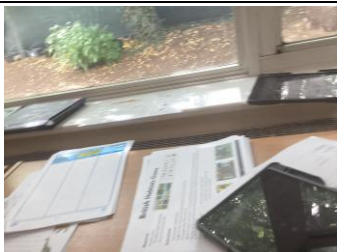
Appendix 4: The Mosaic Approach Implemented

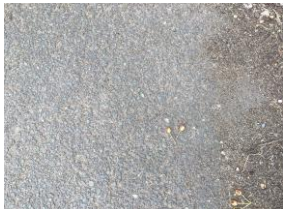


This model depicts the tiles used in this adapted Mosaic approach to data collection. The tiles will be individually thematically analysed before thematic analysis is used to synthesise understanding and search for consistencies for individuals. The methodological considerations are wide-ranging; however, aspects are present in the model. First, the aspect of Pupil context questions was used at each moment of data collection so that further context and understanding could be gathered as to the intention of the individual's communication.

Appendix 5: Photo Tours Tiles

This table presents the children's photographs taken and selected by them to be included in the study

Participant	Picture 1	Picture 2	Context questions and Observations
C1			Pic 1- Green plant Pic 2: Outside
C2			Unable to comment Supported 1 to 1 throughout.
C3			Pic 1- These have come off the trees. Pic2- We can see plants outside from the room. It's nice. I want to go outside.
C4			Pic 1 – support to use camera. Took lots of pictures of the same thing. Pic2- Stated 'Gate'
C5			Support to use pictures. Very excited and enjoying using camera Stated 'Outside'

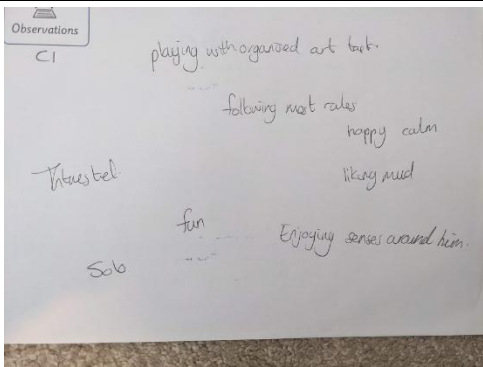
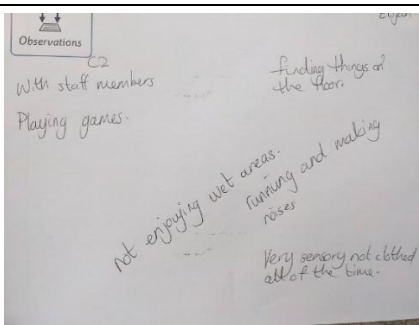
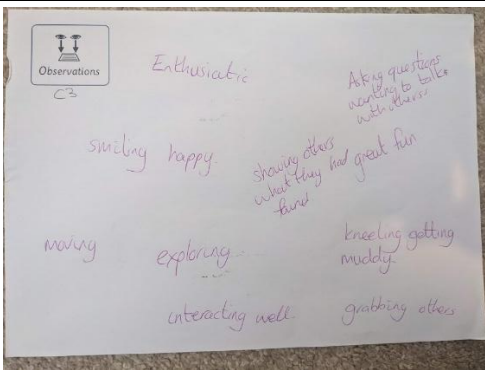
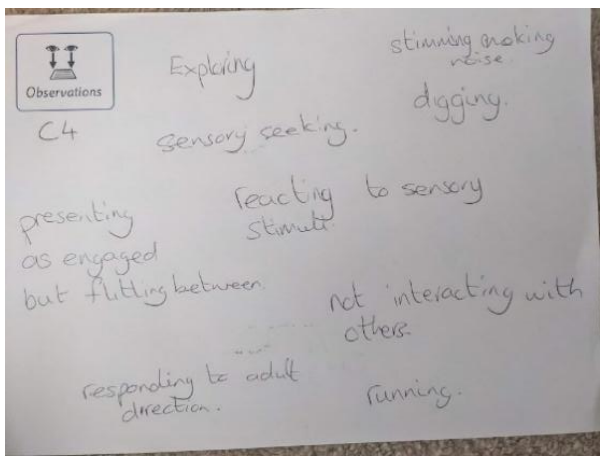
C6			Presented happy and engage by tech.
C7			Presented very happy to take part but became frustrated with the camera and not wanting help. Pic 1- This could be the stick, its small. Pic 2- Green lots of plants, insects to.
C8			Happy to use camera took a lot of pictures. Took pictures of the floor and couldn't comment on the pictures.
C9			Wanted to take pictures independently. Said, 'Leaves a Flowers and Bees'
C10			Was supported to use camera and requested support from adult. Pic 1 'its ant' Pic 2- the stone is for the ant.

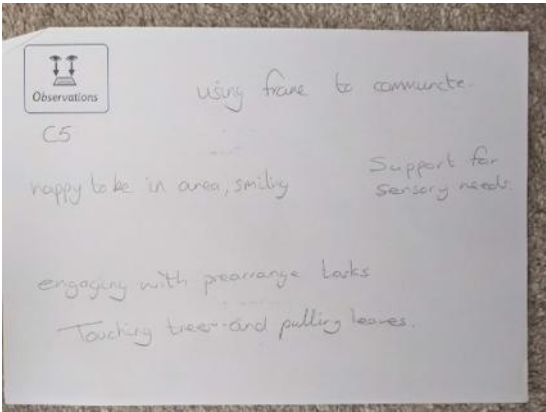
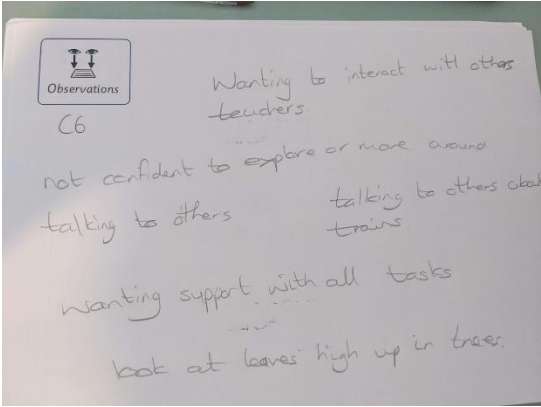
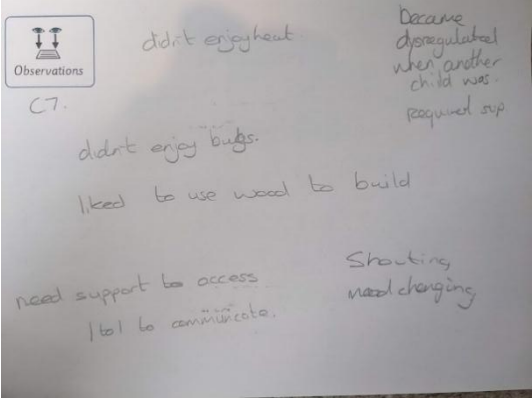
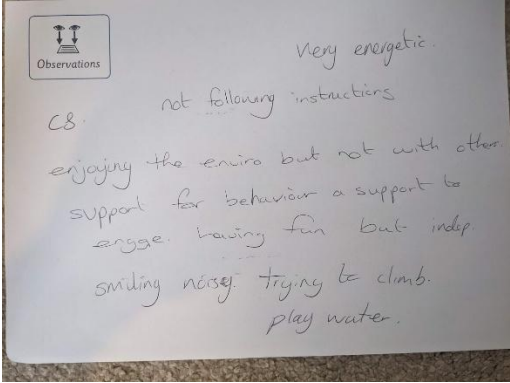
C11			Very enthusiastic to use technology. Pic 1- the trees and tall, bigger than the school/ Pic 2- The tree has lines and marks on it.
C12			Became frustrated with the tech and didn't want any help. Wanted to use them for different things. Was unwilling to comment on the pictures
C13			Pic 1- Here is a spider's home they make webs to catch flies. I can't see the spider though. It can be a little scary' Pic2: these are the beautiful flowers they make everything nice.
C14			Took pictures quickly and engaged with other things. Pic1- Flowers, Pink and great and peaceful. Bees make honey. Pic 2- The leaves are green and hide things.

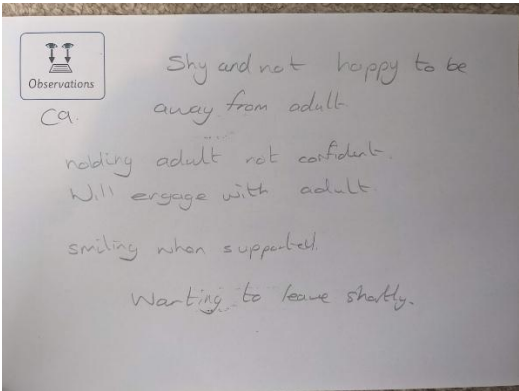
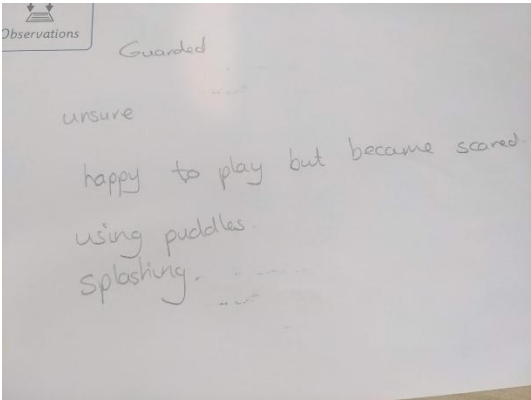
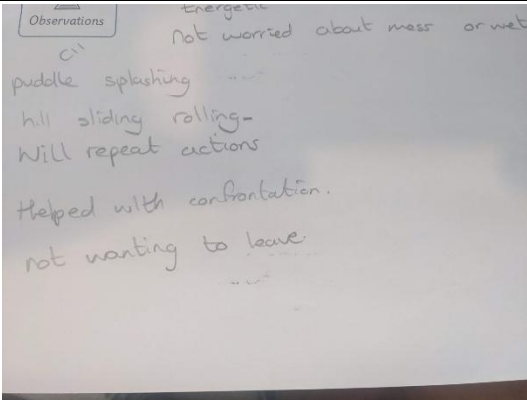
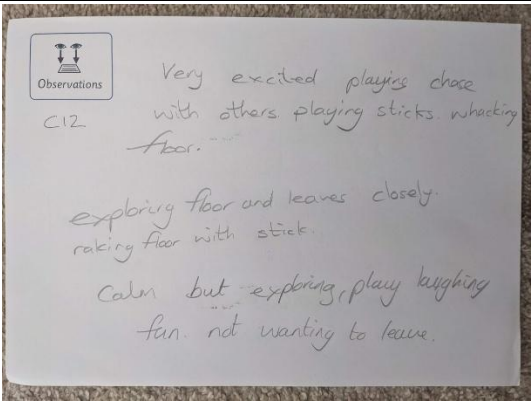
C15			Support to take pictures. Wanted to take pictures quickly. Unable to comment on pictures.
C16			Took pictures independently. Pic1- The sun is coming through leaves it's pretty. Pic 2- The trees are noisy when they have leaves. It's a nice sound.
C17			Took pictures of things in immediate area. Unable to respond to questions regarding the pictures.
C18			Liked talk pictures and discussing them. Very enthusiastic. Pic 1- 'The leaves pokes through the fences and grows everywhere.' Pic 2- There are lots of different leaves that grow in the same place. The

			animals are crawling all over them. It's fun.
C19			Waned to take pictures. Unique methods Unable to comment on the picture. Pointed to nature and green symbol.
C20			Use camera well. Pic 1- This is a leaf its green, caterpillars eat them.' Pic 2- More leaves here into the garden.

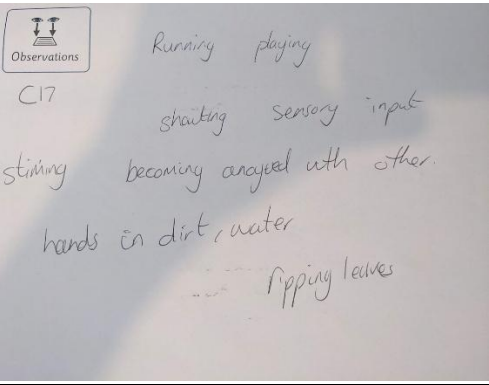
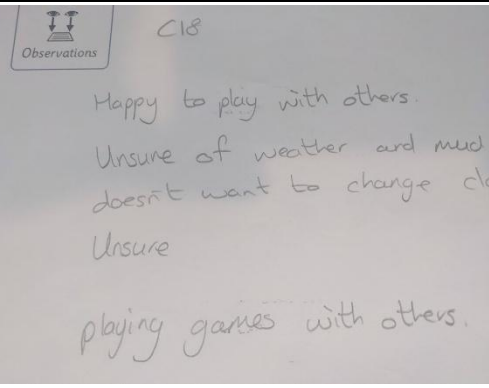
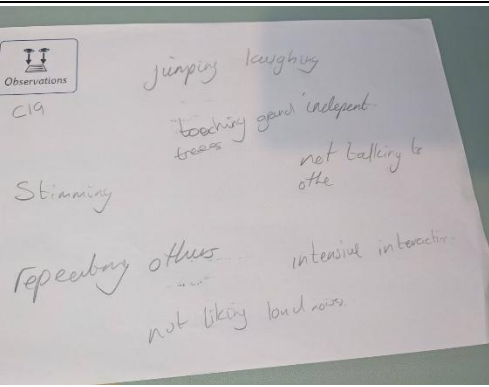
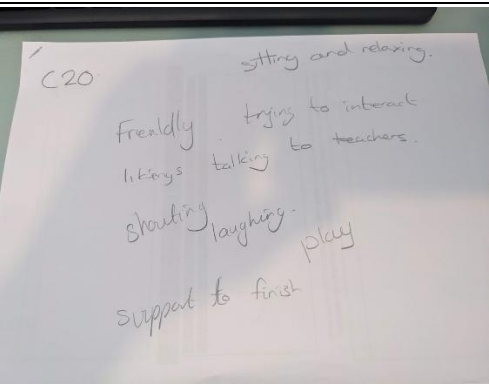
Appendix 6: Observation Tiles

C1	
C2	
C3	
C4	

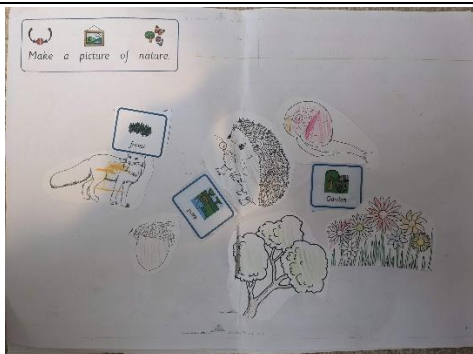
C5	 Observations C5 using face to communicate. happy to be in area, smiling Support for sensory needs. engaging with prearrange tasks Touching trees and pulling leaves.
C6	 Observations C6 Wanting to interact with other teachers. not confident to explore or move around talking to others talking to others about trains wanting support with all tasks look at leaves high up in trees.
C7	 Observations C7. didn't enjoy heat. Because dysregulated when another child was. required sup didn't enjoy bugs. liked to use wood to build need support to access Shouting 1 to 1 to communicate. need changing
C8	 Observations C8. Very energetic. not following instructions enjoying the enviro but not with other support for behaviour a support to engage. having fun but indep. smiling noise. trying to climb. play water.

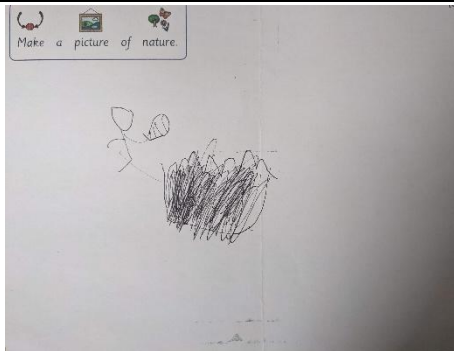
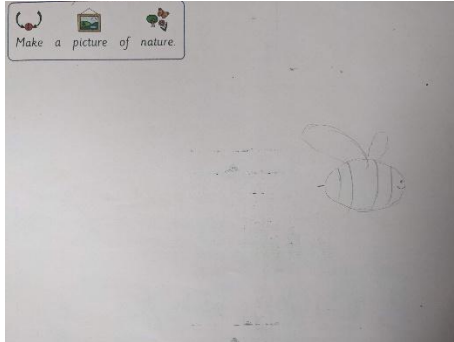
C9	 Observations C9. Shy and not happy to be away from adult. holding adult not confident. Will engage with adult. smiling when supported. Wanting to leave shortly.
C10	 Observations Guarded unsure happy to play but became scared. using puddles. splashing.
C11	 Observations C11 Not worried about mess or wet puddle splashing hill sliding rolling. Will repeat actions helped with confrontation. not wanting to leave.
C12	 Observations C12 Very excited playing chase with others playing sticks whacking floor. exploring floor and leaves closely. raking floor with stick. Calm but exploring play laughing fun. not wanting to leave.

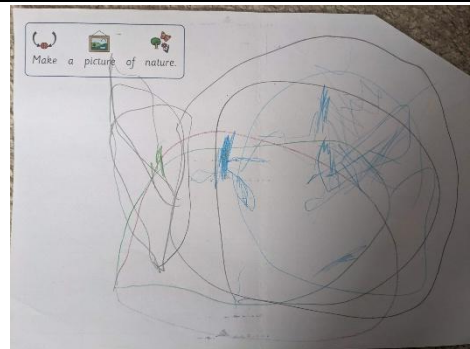
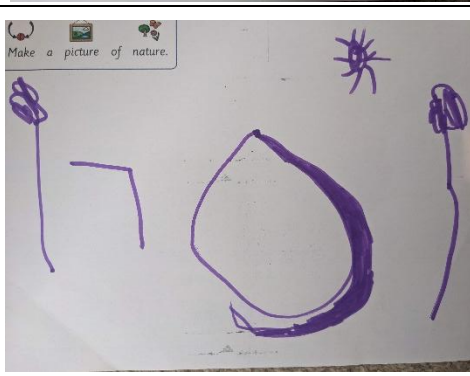
C13	 C13 Very happy Joining in with others. Using all tasks pushing out of comfort zone. Enthusiastic With others enjoying Stretching boundaries.
C14	 C14. quiet friendly with others. exploring. enjoying avoiding dirt and water likes hunt activity. slow movements but needed support. PC.
C15	C15 starting running jump. splash skipping wanting warm sun. engaging own activity smile getting dirty unsur.
C16	 C16. very friendly with others quiet sharing games. playing with trees Playing nicely smiling. support for hearing. running games with others

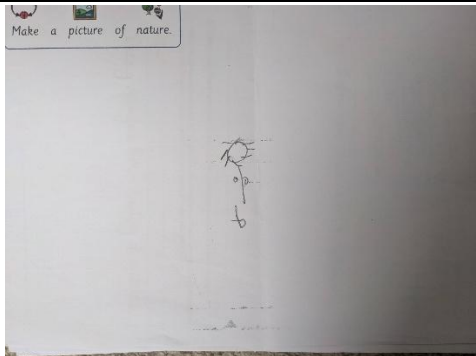
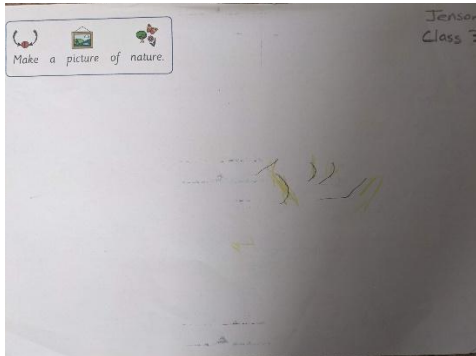
C17	 Observations C17 Running playing shouting sensory input stimming becoming annoyed with other. hands in dirt, water ripping leaves
C18	 Observations C18 Happy to play with others. Unsure of weather and mud doesn't want to change clothes Unsure playing games with others.
C19	 Observations C19 jumping laughing teaching good independent trees not talking to other Stimming Repeating others intensive interaction not liking loud noise
C20	 C20 sitting and relaxing. Friendly trying to interact likes talking to teachers. shouting laughing play support to finish

Appendix 7: Artwork Tiles

Participant	Artwork	Context Questions
C1		Trees, fox, flowers Presented happy and excited
C2		Unable to comment on picture. Presented distracted by other not engaging with task.
C3		Trees are outside. They are big and make noise. It would be fun to climb. It's nice. Presented as happy to talk and express ideas and feelings. Excited
C4		Unable to comment on picture. Pointed to smiley face on symbols. Presented- distracted, tricky to engage with task, support to use symbols to communicate.

C5		Use natural materials from variety that was given to them. Used leaves and Glue. Stated- 'Flower' Presented as happy and excited to make a picture. Engaged for a short time.
C6		Presented happy to engage and make a picture. Became unhappy with task and wanted it to end so stopped. Stated- The trees are tall and green and brown. The sun is nice. Outside can be nice.
C7		Was engaged for a short while and happy to take part. Repeated, 'nature is this' 'It's a messy stick' 'fun to use'
C8		Happy to take part want to use scissors and very motivated to use felts. Stated 'it's a bird' 'flies'
C9		Reluctant to engage and shy Said, 'Bees are nature'.

C10		Impatient and found engaging tricky. Stated 'blue and green'
C11		Happy to take part but for a short time. Presented as happy and smiling. Stated- 'this is a trees and sun and a rock, you can get rivers.'
C12		Happy to engage and enthusiastic to show off what they have created. 'That's me and the tree house, the mud is brown and he leaves are green. It's nice and happy' 'Must be able to climb the leaves up to the top of the trees.'
C13		Very happy to explain and describe what he they have drawn. The sun is very hot, and it makes the trees grow. The animals live in the trees and the habitats.' 'There are butterfly's that make nature calm and beautiful.'

C14		Happy to take part but only for a short time. 'This is my flower. They are good, nice.'
C15		Found the task challenging to engage. Distracted with attention flitting. Stated 'yellow'
C16		Very engaged and took time to create picture. The sun is happy, but it can still rain its important. We can have lots of water and go back in the car.
C17		Chose to use natural resources and glue Was unable to comment on the pictures but was animated and smiled when asked.
C18		Wanted to express and show off the picture he had created. Very enthusiastic and enjoyed talking about the picture. 'The tree is here we have lots of them and need then for air. The grass is to walk on, and the sun is very hot. It helps the grass grow.'

C19		Very happy to take part and choose colours to use in the session. 'Trees, beautiful colours'
C20		Very happy and enthusiastic to take part. 'This is nature it's a butterfly that likes the sun. Lots of colours and it's nice to be there with calm and colours.'

Appendix 8: Example of Teacher Questionnaire Tile

Name of Child _____ - All data will be completely anonymous.

Year group of your child _____

1. In general, how does the pupil respond to being in natural environments?

Would you say that their responses are usually positive, negative or neutral?

And why do you think they react this way?

Positive	☒	Negative	☐	Neutral	☐
----------	-------------------------------------	----------	--------------------------	---------	--------------------------

Tick one

Answer

I think _____ really comes out of his shell when in natural environments. He is often more outgoing and socially active in the class group when outdoors.

2. Can you describe a time when the pupil has had a **positive** response to a natural setting?

What happened and what did you notice about their response? What makes you think their response was connected to the natural place? What kind of natural place was this?

Answer

During a class trip to Haughmond Hill _____ could be seen to be really enjoying himself and engaging with others and the natural environment. He was independently building mock camp fires, engaging in imaginary play with sticks, and exploring the woodland floor (touching leaves, branches etc). He was excited and bubbly the whole trip and I think this behaviour was connected to being outside and exploring new places with his friends.

3. Can you describe a time when the pupil has had a **negative experience** in a natural setting?

What happened, and how did they respond? What makes you think their reaction was related to the setting? What kind of natural setting was it?

Answer

[redacted] generally has a good time outdoors. I have seen him have minor fall outs with friends during Forrest school in the past. The example I can think of involved a disagreement whilst building a den using tarps and ropes. [redacted] wanted it done one way, and a friend wanted it done another. I do not necessarily think the disagreement was related to the natural setting, and more due to a difference of opinion, but it did occur over outdoor play.

4. Has there been a time when being in nature helped the pupil feel calmer or more emotionally regulated?

What was happening at the time, and why do you think the natural setting made a difference? What changes did you see in the pupil?

Answer

I think [redacted] is more emotionally regulated in nature. He seems less anxious and worried when outdoors and he enjoys himself a lot. He seems more socially outgoing and I think presents with less challenging behaviour when outside.

5. How do you think the pupil would respond to the following questions?

a) What is nature?

Answer

I think [redacted] would associate nature with trees, grass and plants.

b) What do you think of nature?

Answer

I think he would think positively of nature, he is likely to say he likes it.

c) What is bad about nature?

Answer

When people litter or cut down trees.

d) What is good about nature?

Answer

It's nice to look at and play in.

6. What are the elements of a natural setting that the pupil finds enjoyable? In your perspective, why are these elements enjoyable for them?

Answer

I think [redacted] enjoys being in woodland. He enjoys playing with sticks and fallen branches, and spending time amongst trees. I think these things encourage play and imagination in [redacted]

7. What are **your own** views on spending time in natural places? Why do you feel this way?

Answer

I love to spend time outdoors. It always makes me feel calmer, less stressed and more happy. I notice positive changes in my behaviour and mindset when I am, or I have, spent time in natural places.

8. Imagine you are planning an outing with the pupil to a natural setting. What are the aspects of the visit you would consider making the outing a success? What do you need to consider making the visit enjoyable for the pupil?

Answer

I would look for natural settings which encourage or have opportunities for play. I think [redacted] will be more engaged with the outing if it is presented as an adventure rather than, for example, a walk.

I would try to include activities and structured break/play opportunities for [redacted] to enjoy.

Appendix 9: Example of Parent or Career Questionnaire.

Name of Child [REDACTED] - All data will be completely anonymous.

Year group of your child [REDACTED]

1. In general, how does your child respond to being in natural environments?

Would you say that their responses are usually positive, negative or neutral?

And why do you think they react this way?

Positive	☒	Negative	☐	Neutral	☐
----------	-------------------------------------	----------	--------------------------	---------	--------------------------

Tick one

Answer

My Child responds positively when spending time in natural environments. He appears calmer when outdoors compared to highly structured settings. As being outside provides a sense of space and balance, which helps him emotionally and focus more effectively.

2. Can you describe a time when your child has had a **positive** response to a natural setting?

What happened and what did you notice about their response? What makes you think their response was connected to the natural place? What kind of natural place was this?

Answer

The natural place was an open green area with grass, trees, and space to move freely. The lack of noise, structure and confinement appeared to help him feel comfortable and secure. This made me believe that his positive response was directly connected to the natural setting, as these behaviours are more noticeable outdoors than indoors.

Can you describe a time when your child had a **negative experience** in a natural setting?

What happened, and how did they respond? What makes you think their reaction was related to the setting? What kind of natural setting was it?

Answer

There has been an occasion where my child had a negative experience in a natural setting, particularly an busy and unpredictable outdoor setting where it was crowded and noisy with lots of movement and activity happening around him. During this time he became overwhelmed and unsettled, anxious, he found it difficult to remain engaged and needed reassurance and support. It highlighted to myself that while busy public parks are quite and calm he responds much more calmly and structured.

4. Has there been a time when being in nature helped your child feel calmer or more emotionally regulated?

What was happening at the time, and why do you think the natural setting made a difference? What changes did you see in your child?

Answer

Yes, this has usually occurred when he has been feeling unsettled and frustrated prior to going outdoors. On these occasions spending time in the garden while it has been quite helped him slow down and re-set, I noticed clear changes in his behaviour, his body language relaxed, and his mood improved, he appeared more emotionally balanced.

How do you think your child would respond to the following questions?

a) What is nature?

Answer

Outdoors - Such as Trees, grass, Parks, animals
Where he can move around openly and freely

b) What do you think of nature?

Answer

being able to explore

c) What is bad about nature?

Answer

The weather at times - Strong winds or Rain

d) What is good about nature?

Answer

When quiet - Can be a place to breathe Sincerely
and Relax

What are the elements of a natural setting that your child finds enjoyable? In your perspective, why are these elements enjoyable for them?

Answer

from my perspective he appears to Enjoy :

- Quiet or Low-Noise Environments, Open Space
- Natural Features - trees, grass, fresh-air
- unstructured time

As They Naturally Reduce anxiety and pressure's

7. What are your own views on spending time in natural places?
Why do you feel this way?

Answer

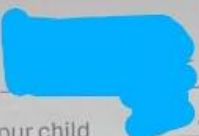
its positive and important for both Emotional and Mental Relieve, I believe Nature provides an opportunity to Slow Down, Reduce Stress, and Re-connect with a Calmer Pace of life in general helps me to Re-charge and focus. incorporated into Daily life and activities.

8. Imagine you are planning an outing with your child to a natural setting. What are the aspects of the visit you would consider making the outing a success? What do you need to consider making the visit enjoyable for your child?

Answer

Prepare a Custom String bag with exploring equipment for imaginative play, and Taking a Camera for memories, a Success would be planning it on a Sunny Day, in a Quite Area,

Appendix 10: Example of Child Questionnaire tile

Name of Child  - All data will be completely anonymous.

Year group of your child _____

1. In general, how do you respond to being in natural environments?

Would you say that their responses are usually positive, negative or neutral?

And why do you think they react this way?

Positive	☒	Negative	Neutral
----------	-------------------------------------	----------	---------

Tick one

Answer

Habitats animals live in habitats. Sometimes we chop down trees we shouldn't chop the down they live there. Like monkeys spider. Cows, pigs.

2. Can you describe a time when you have had a **positive** response to a natural setting?

What happened and what did you notice? What kind of natural place was this?

Answer

Deserts, camels live there and kangaroos. A tree like that one. Sometimes climb like spiderman but you must be careful or you could get badly injured and die.

3. Can you describe a time when you have had a **negative experience** in a natural setting?

What happened, and how did you respond? What kind of natural setting was it?

Answer

Chopping trees makes you feel sad. Killing spiders. I've got over my fear of spiders.

4. Has there been a time when being in nature helped you feel calmer or more emotionally regulated? What was happening at the time, and why do you think the natural setting made a difference? What changes did you see?

Answer

Yes calmer.

a) What is nature?

Answer

A place a habitat that animals live in.

b) What do you think of nature?

Answer

I like it.

c) What is bad about nature?

Answer

Cutting down trees and killing spiders.

d) What is good about nature?

Answer

It good and theres lots of animals.

5. What are the elements of a natural setting that you enjoy?

Answer

animals trees habitats.
spiders.

6. What are **your own** views on spending time in natural places?
Why do you feel this way?

Answer

7. Imagine you are planning an outing to a natural setting. What are the aspects of the visit you would consider making the outing a success? What do you need to consider making the visit enjoyable?

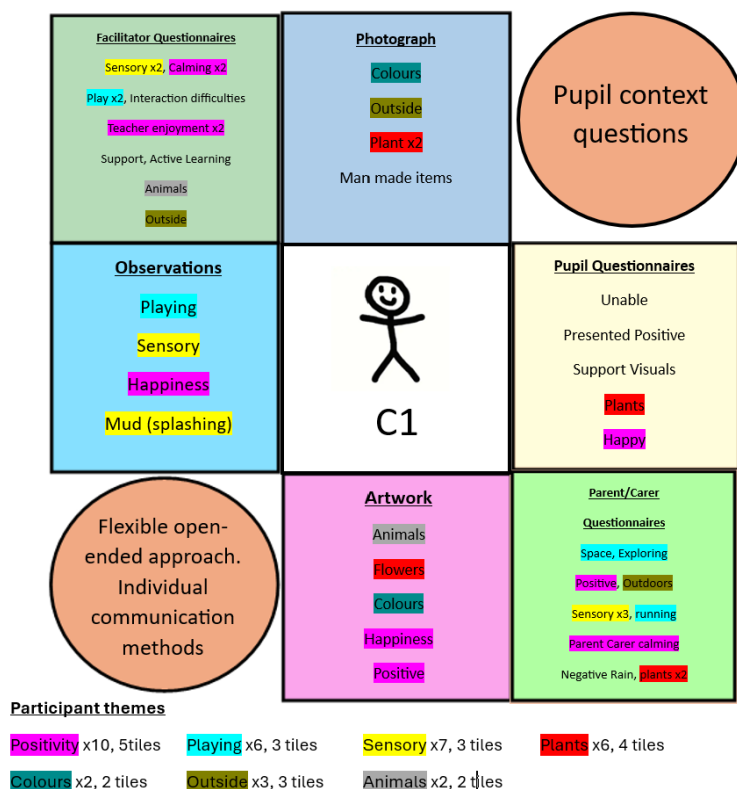
Answer

Animal check sheet.
Pencil.
Some iPads for pictures of
animals.

Appendix 11: Individual Mosaics

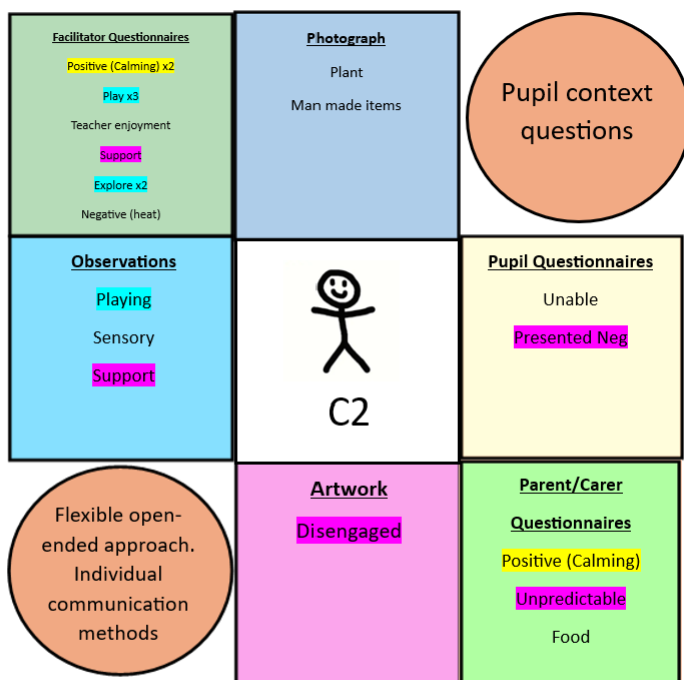
Image 9 shows the prevalent themes of the population of the study, but also to which subjects these themes are found. This Image asserts that the most prevalent themes that form the subjects' perspectives are Positive (153), Plants (65) and Playing (61), advocating and supporting the findings collected in the analysis of individual tiles. This implies that the subjects perceive nature in a positive way, where they can play with plants being integral to nature. If the number of occurrences is analysed, then this conclusion can be made. However, as previously mentioned, these relationships and perceptions are highly personal, with the intended objectives of the study not being to only find commonalities over the entire population but to understand the individual perspectives.

For example, the Sensory (37), Support (22) and Negative (38) themes will be of great importance and may well indicate that a great level of attention is required to these specific themes and that the details and intricacies found in the individual mosaics should be consulted so that these elements of the individuals and/or class groups can be planned for and supported. In terms of the practicalities of planning sessions, the most pertinent themes may not be those that suggest overall perceptions of nature but are actually those themes that may highlight areas that the individuals need to be supported with so that they and the group can continue to form positive connections to nature.



Participant C1 prevalent themes related to their perception of nature are; Positivity (10 times over 5 tiles), Playing (6 times over 3 tiles), Sensory (7 times over 3 tiles) and Plants (6 times over 4 tiles). These themes suggest that the participants perception of nature is positive with playing in nature important to the individual. Sensory input needs are also a relevant concern for the individual as well as plants being attributed to nature. Other notable themes include Colours, Outside and Animals Suggesting that the individual relates nature to being a place to find animals, colours and being described as Outside.

C1 Mosaic

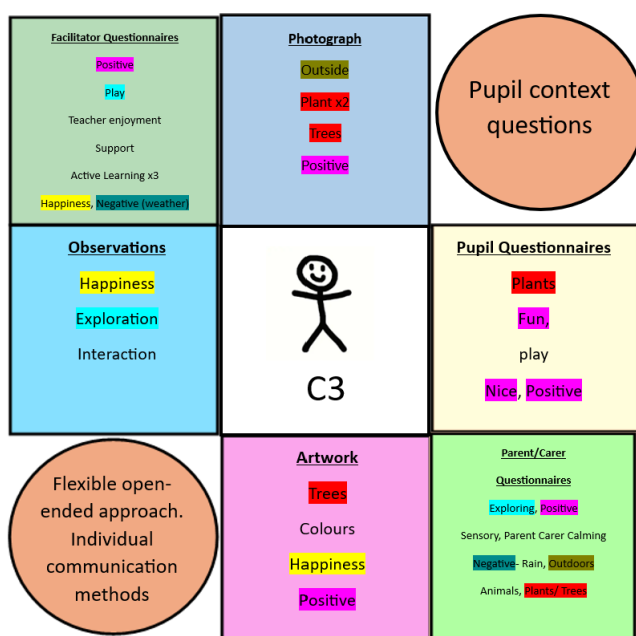


Participant themes

Support x5, 5 tiles
 Playing x6, 2 tiles
 Positive Calming x3, 2 tiles

C2 Mosaic

Participant C2 prevalent themes that indicate their perceptions of nature are; Support (5times, over 5 tiles), Playing (6times over 2 tiles and Positive (3 times over 2 tiles). The Positive theme for this individual did have a link to being calming and a strategy for the individual to regulate their emotions and actions. The themes presented here suggest that the participant has a Positive perception of nature and perceives nature as a place of Play. However, Support presented has the most common themes and this suggest that the positive experiences and therefore perceptions of the child need to be cultivated by adult support. This support has been in terms of interaction difficulties and support with activities involving play.



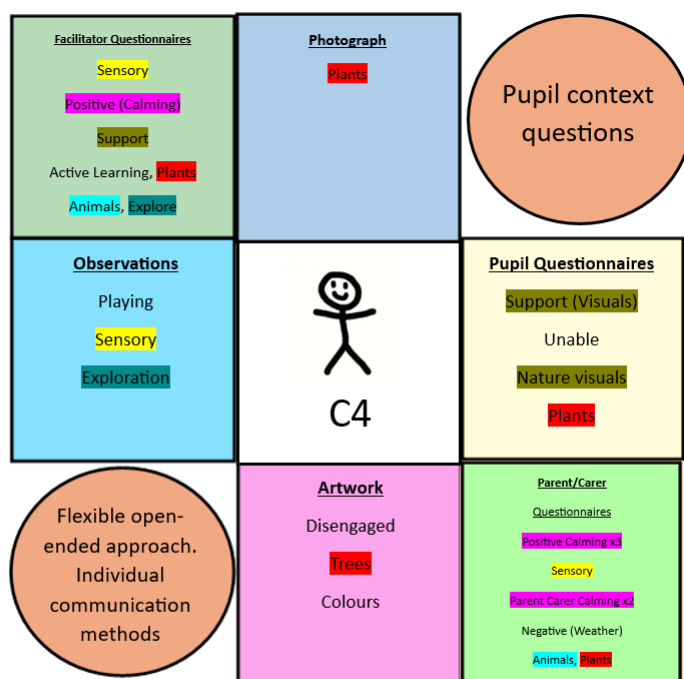
Participant themes

Positive: x 7, 5 tiles
 Playing x3, 3 tiles
 Happiness x 3, 3 tiles
 Plants x6, 4 tiles
 Negative (weather) x2, 2 tiles
 Outside x2, 2 tiles

Mosaic

C3

Prevalent themes for participant C3 regarding their perceptions to nature are; Positive (7 times, over 5 tiles), Plants (6 times, over 4 tiles) and Playing and Happiness (both 3 times over 3 tiles). Other notable themes include Negative and Outside (Both 2 times over 2 tiles). The themes presented here suggest that the participant has a positive perception of nature, relating plants and the term outside to being significant parts of nature. The child perceives nature as a place to play and with a feeling of happiness. In regard to the Negative theme this was related to weather and a dislike of feeling cold and wet.

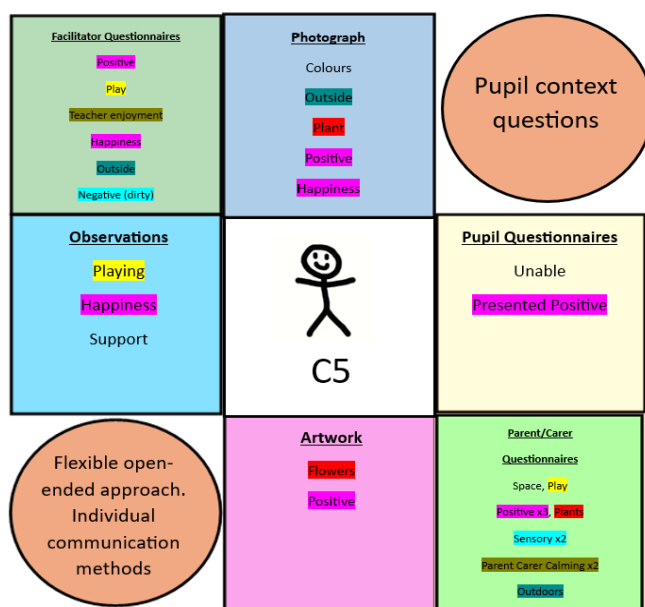


Participant themes

Positivity x5, 2 tiles Animals x2, 2 tiles Sensory x3, 3 tiles Plants x5, 5 tiles
Exploration x2, 2 tiles Support x3, 2 tiles

C4 Mosaic

Prevalent themes for participant C4 regarding their perceptions to nature are; Plants (5 times over 5 tiles), Positive (5 times over 2 tiles) and Sensory (3 times over 3 tiles). Other notable themes are Animals (2 times over 2 tiles), Support (3 times over 2 tiles) and Exploration (2 times over 2 tiles). The theme suggest that this participant has a positive perception of nature and perceives plants to be nature. The Sensory theme suggests that the participant has a positive sensory experience in nature and desired gathers sensory input from their time and experiences in nature. This Sensory theme would need to be monitored by facilitators so that overwhelm and dysregulation does not occur, this theme is also reinforced by the presence of the Support theme.

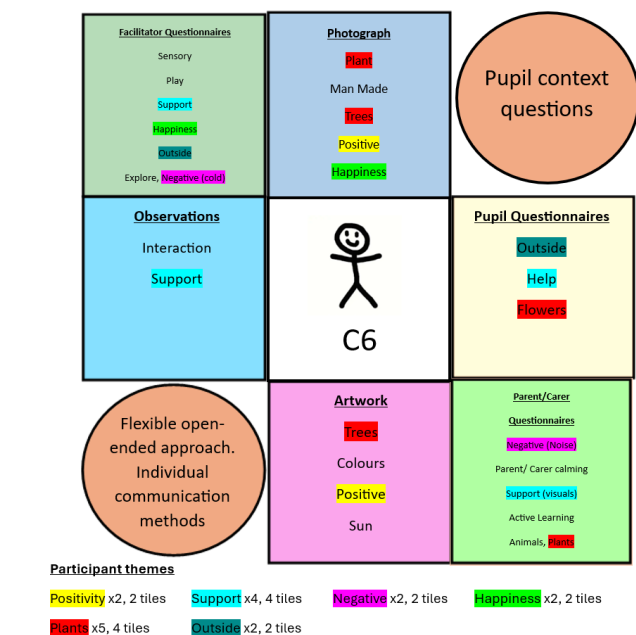


Participant themes

Positivity x10, 6 tiles Sensory x3, 2 tiles Play x3, 3 tiles Plants x3, 3 tiles
Outdoors x3, 3 tiles Adult influence x3, 2 tiles

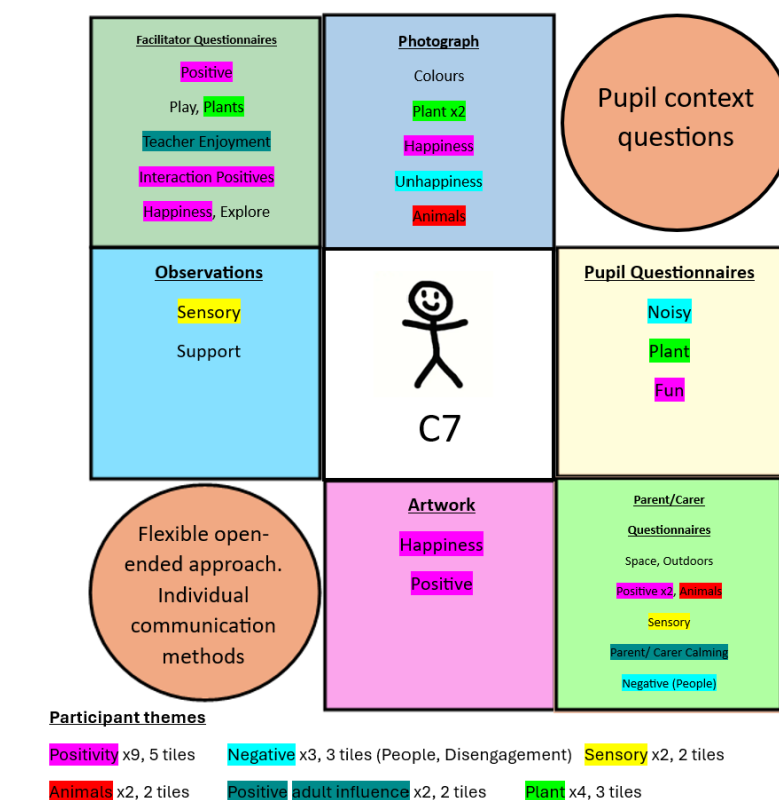
C5 Mosaic

Prevalent themes for participant C5 regarding their perceptions to nature are Positive (10 times over 6 tiles), Plants, Play and Outdoors (all 3 times over 3 tiles) and Sensory and Adult influence (both 3 times over 2 tiles). These themes suggest that this individual has a positive perception of nature and perceives nature to be a place of play and to be described as outdoors and the place of plants. The other themes suggest that the individual has positive sensory input needs met in the natural world, with this being an ongoing consideration for facilitators. Other tiles also suggested that the adult influence and perceptions of these adults may have a effect on the children's experiences and therefor perceptions of nature.



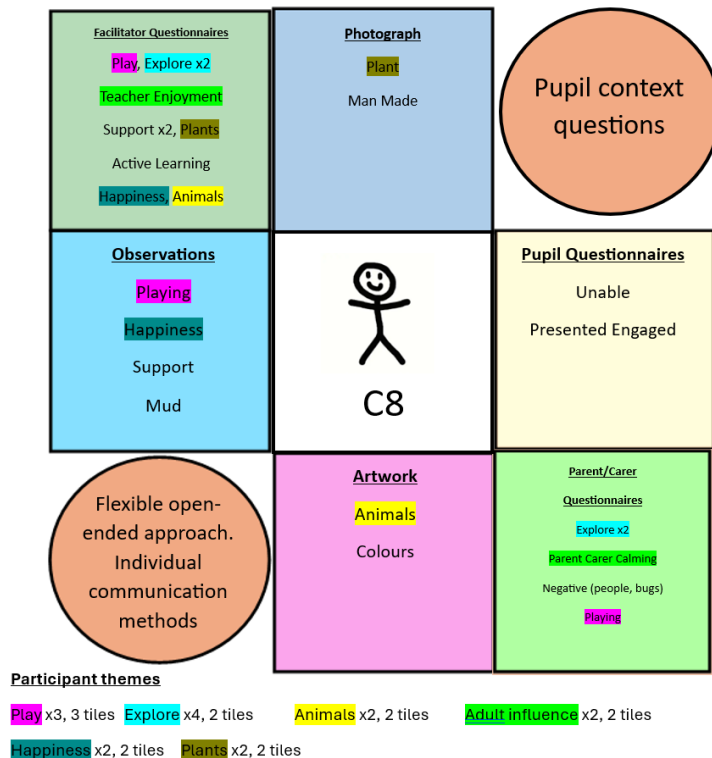
C6 Mosaic

Prevalent themes for participant C6 regarding their perceptions to nature are Plants (5 times over 4 tiles), Support (4 times over 3 tiles) with Positivity, Negative, Happiness and Outside being other notable themes (all 2 times over 2 tiles). These prevalent themes suggest that the individual has a positive perception of nature with Positive and Happiness being present. However, the Negative theme was present due to the presence of other people and the overwhelm and dysregulation that this may occur. This would support the presence of the Support theme and the need for facilitators to support the child's sensory, communication and regulation needs. The child also perceives plants to be nature.



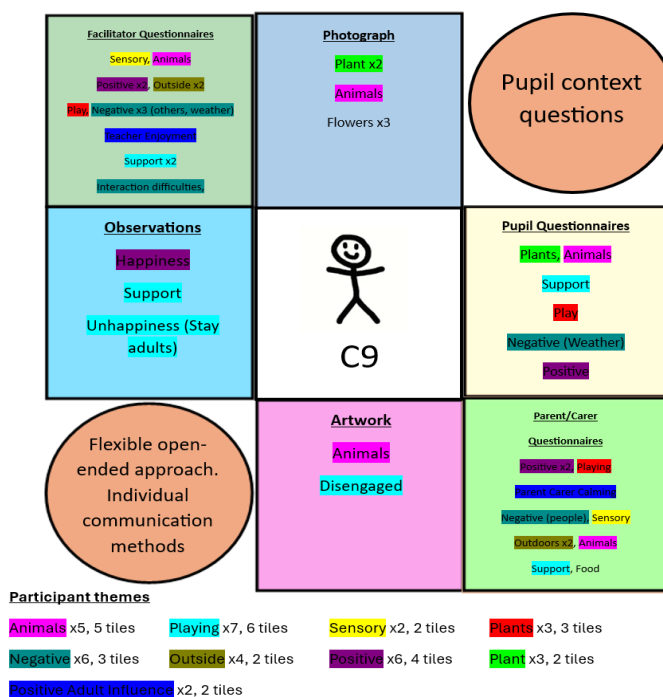
C7 Mosaic

Prevalent themes for participant C7 regarding their perceptions to nature are; Positive (9 times over 5 tiles), Plants (4 tiles over 3 tiles), Negative (3 times over 3 tiles). Other notable themes include Sensory, Animals and Adult Influence (all 2 times over 2 tiles). These themes suggest that the participant has a Positive perception of nature relating Plants as an integral part of nature. However, the Negative theme was related to the presence of other people and the overwhelm that may occur, this is supported by the presence of the Sensory theme. This Negative theme also included a disengagement with nature and or the experiences presented. These will be on going considerations for the facilitators and the support and experiences that they offer. The presence of Adult Influence suggest that the participants experiences and perceptions may have been affected by the adults that they encounter.



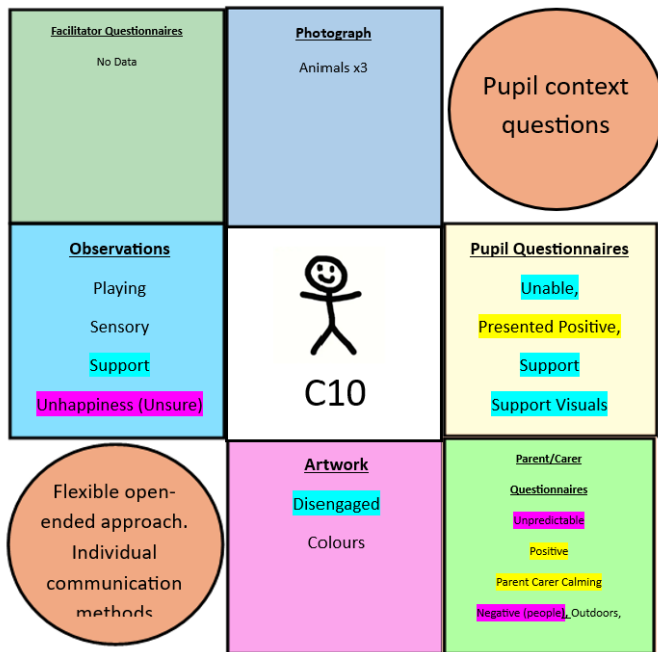
Prevalent themes for participant C8 regarding their perceptions to nature are; Explore (4 times over 2 tiles, Play (3 times over 3 tiles) and Animals, Adult Influence, Happiness and Plants (all 2 times over 2 tiles). The themes suggest that the participant perceives nature as a place to investigate, explore and play. This suggests a positive relationship with nature; this conclusion is also supported by the Happiness theme being present. The other notable themes of Animals and Plants suggest that the individual relates animals and plants to the essence of nature.

C8 Mosaic



Prevalent themes for participant C9 regarding their perceptions to nature are; Playing (7 times over 6 tiles), Animals (5 times over 5 tiles), Positive (6 times over 4 tiles) and Negative (6 times over 3 tiles). Other notable themes include Plants (3 times over 3 tiles), Outside (4 times over 4 tiles), Adult Influence and Sensory (2 times over 2 tiles). These themes suggest that the participant has a positive perception of nature and relates nature as a place to play and have fun. However, the participant does have negative perceptions of nature that relates to interactions with others and weather conditions leading to dysregulation. These are considerations for facilitators when they are planning positive experiences in nature for the participant. The other themes presented suggest that animals and plants are considered integral parts of nature with nature being considered 'outside'.

C9 Mosaic



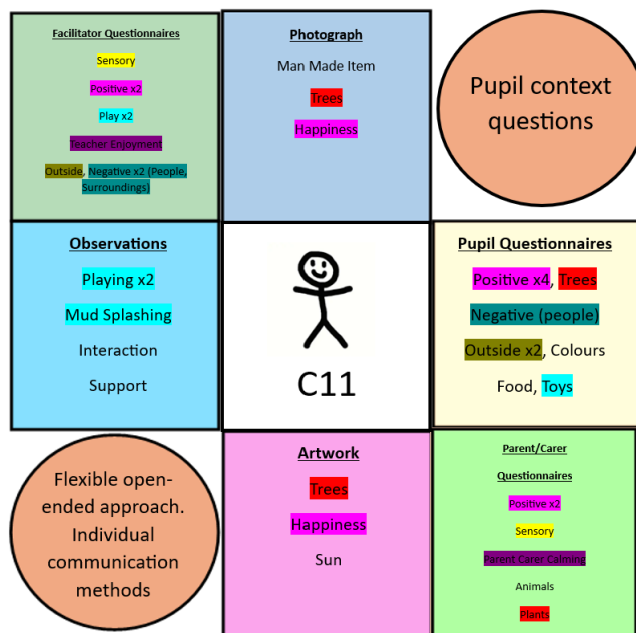
Participant themes

Support x5, 3 tiles Negative x3, 2 tiles Positive x3, 2 tiles

C10

Mosaic

Prevalent themes for participant C10 regarding their perceptions to nature are; Positive (3 times over 2 tiles), Negative (3 times over 2 tiles) and Support (5 times over 3 tiles). The themes presented suggest the participant has a complex perception of nature that are positive under right conditions with the correct type and level of support. The Negative theme stemmed from the disengagement with tasks, interaction with others and the uncertainty that these interactions cause. These are important considerations for facilitators, particularly concerning allocation of supporting staff.

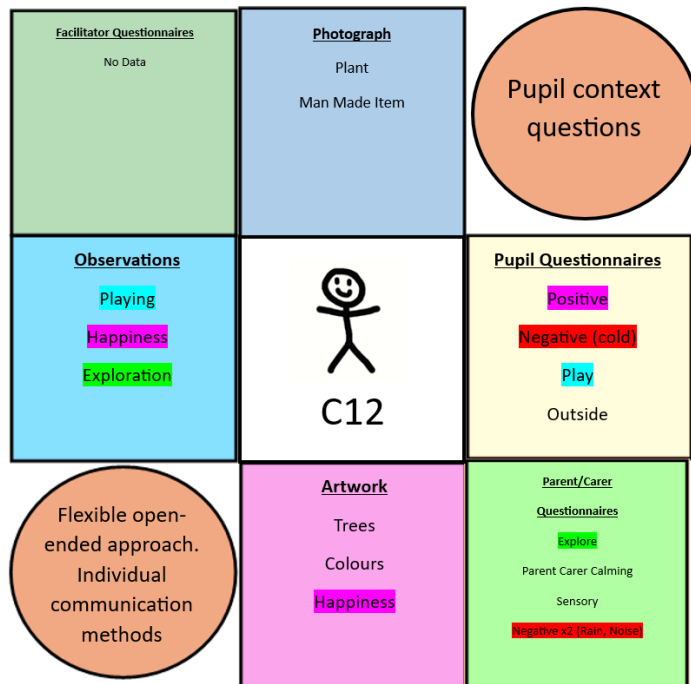


Participant themes

Positivity x10, 5 tiles Playing x6, 3 tiles Sensory x2, 2 tiles Plants x4, 4 tiles
Negative x3, 2 tiles Outside x3, 2 tiles Parent Carer Influence x2, 2 tiles

C11 Mosaic

Prevalent themes for participant C11 regarding their perceptions to nature are Positive (10 times, 5 tiles), Playing (6 times over 3 tiles), Plants (4 times over 4 tiles), Negative and Outside (3 times over 2 tiles) and Adult Influence (2 times over 2 tiles). These themes suggest that the participant has a positive perception of nature and that they believe that nature is a place to play. Plants are also considered an integral part that makes up nature as well as the concept of nature being outside. Negative perceptions of nature are present however with these being in the form of other people and the overwhelm caused by noise and interactions with these people. Adult Influence may also be a factor in the perceptions that the individual has.

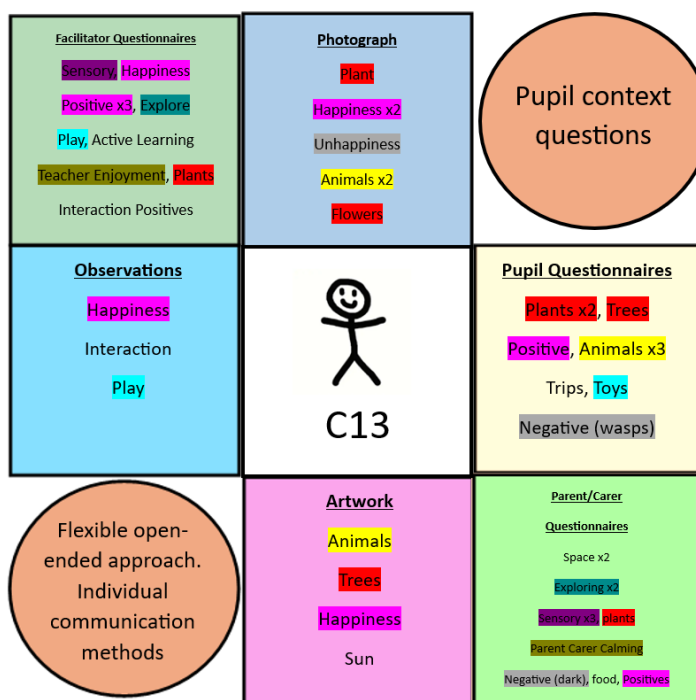


Participant themes

Positivity x3, 3 tiles Playing x2, 2 tiles Negative x3, 2 tiles Explore x2, 2 tiles

C12 Mosaic

Prevalent themes for participant C12 regarding their perceptions to nature are; Positive (3 times over 3 tiles), Negative (3 times over 2 tiles), Playing and Explore (2 times over 2 tiles). These themes suggest that under the correct circumstances the participant has a positive perception of nature. The Negative theme was in relation to rain and the noise crated by other people. Considerations that will be important when creating experiences for this individual.

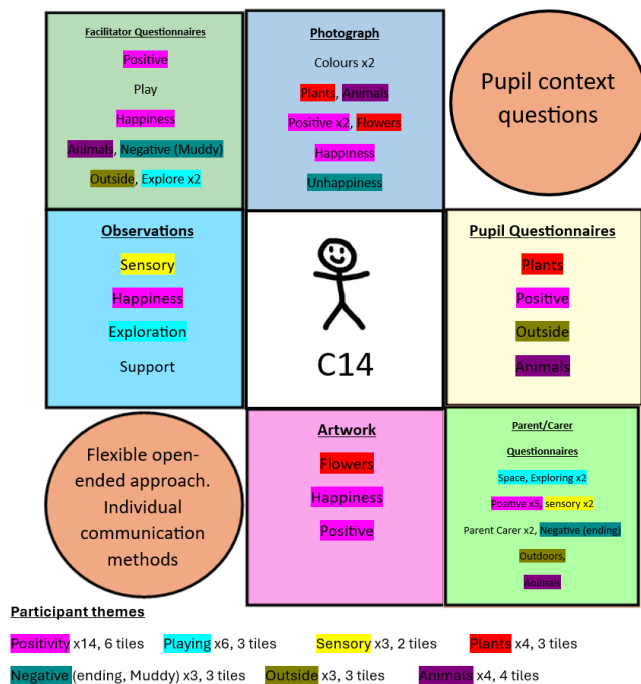


Participant themes

Positivity x10, 6 tiles Playing x3, 3 tiles Animals x6, 3 tiles Plants x8, 5 tiles
Colours x3, 2 tiles Adult Influence x2, 2 tiles Sensory x4, 2 tiles
Negative x3, 3 tiles (dark, wasps)

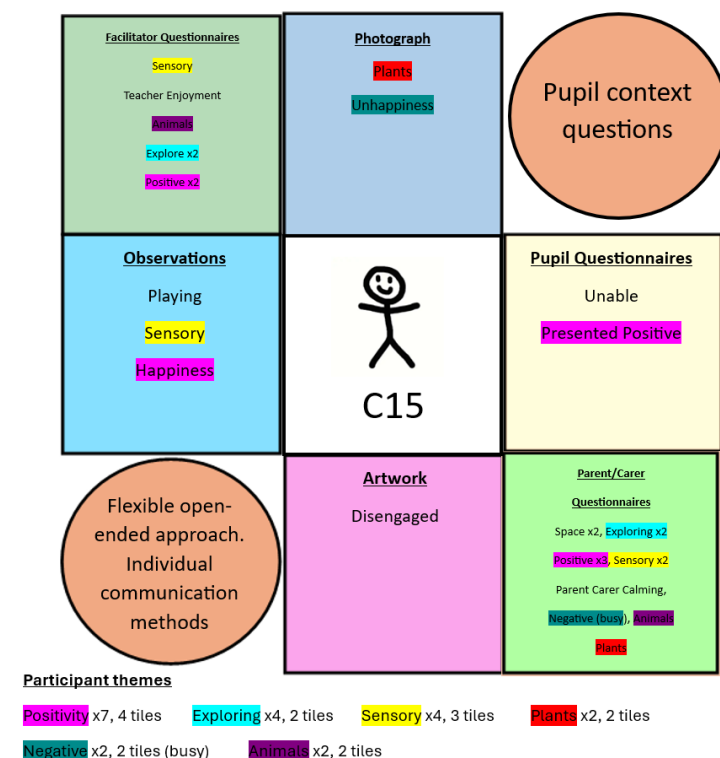
C13 Mosaic

Prevalent themes for participant C13 regarding their perceptions to nature are Positive (10 times over 6 tiles), Plants (8 times over 5 tiles), Animals (6 times over 3 tiles) and Sensory (4 times over 2 tiles). Other notable themes include Playing (3 times over 3 tiles), Colours (3 times over 2 tiles), Negative (3 times over 3 tiles), Adult Influence 2 times over 2 tiles. The prevalent themes suggest that the participant has a complex but positive perception of nature.



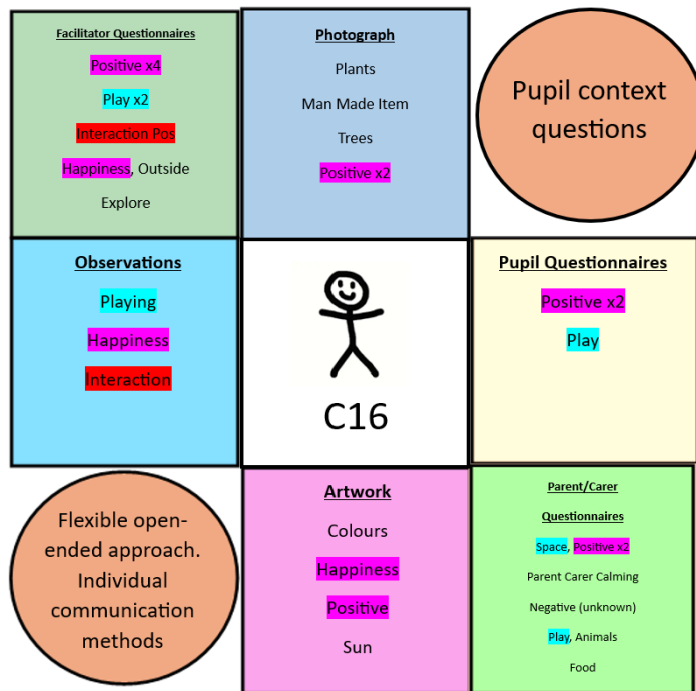
C14 Mosaic

Prevalent themes for participant C14 regarding their perceptions to nature are; Positive (14 times over 6 tiles), Play (6 times over 3 tiles), Animals (4 times over 4 tiles). Other notable themes include Plants (4 times over 3 tiles), Negative and Outside (3 times over 3 tiles) and Sensory (3 times over 2 tiles). The themes suggest the participant has a positive perception of nature with nature being a place to play. Animals and Plants are descriptors or influential factors of nature for this individual. The individual considers nature to be Outside. However, the Negative theme was influenced by Sensory factors and transitional moments when sessions or events are ending. These Sensory findings are also supported by the Sensory theme being present. The recommendations of the mosaic would be for the facilitator to be mindful of the Sensory experiences of the individual and to make allowances or adaptations where possible.



C15 Mosaic

Prevalent themes for participant C15 regarding their perceptions to nature are; Positive (7 times over 4 tiles), Sensory (4 times over 3 tiles), Explore (4 times over 2 tiles). With other notable themes being Plants, Negative and Animals (all 2 times over 2 tiles). These themes suggest that the participant has a positive perception of nature and that nature is a place to explore and investigate. The mosaic also presented the Sensory theme which indicates the child gets positive sensory input by natural settings. This is also supported by the presence of the Negative theme that was present due to busyness of their surroundings and the overwhelm that this could bring. These themes suggest that facilitators must consider the individuals sensory needs when they are planning experiences in nature.

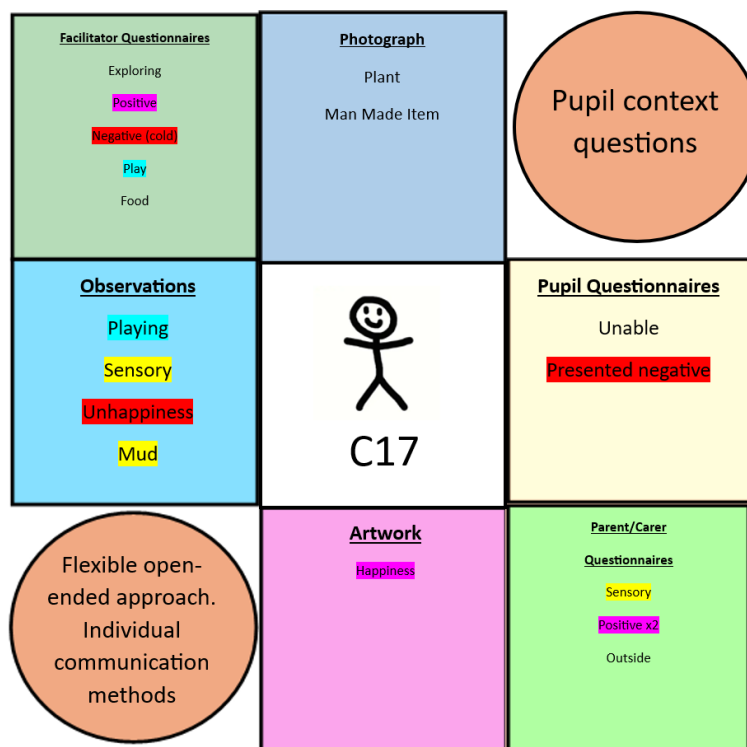


Participant themes

Positivity x14, 6 tiles Playing x6, 4 tiles Interaction x2, 2 tiles

Prevalent themes for participant C16 regarding their perceptions to nature are; Positive (14 times over 6 tiles), Playing (6 times over 4 tiles) and interaction (2 times over 2 tiles). These themes suggest that the participant has a very positive perception of nature. With nature being an arena and an opportunity to play. Nature was also a place for positive interactions with others. These preferences to play and interact with others could be used to inform the experiences used in the sessions ahead.

C16 Mosaic

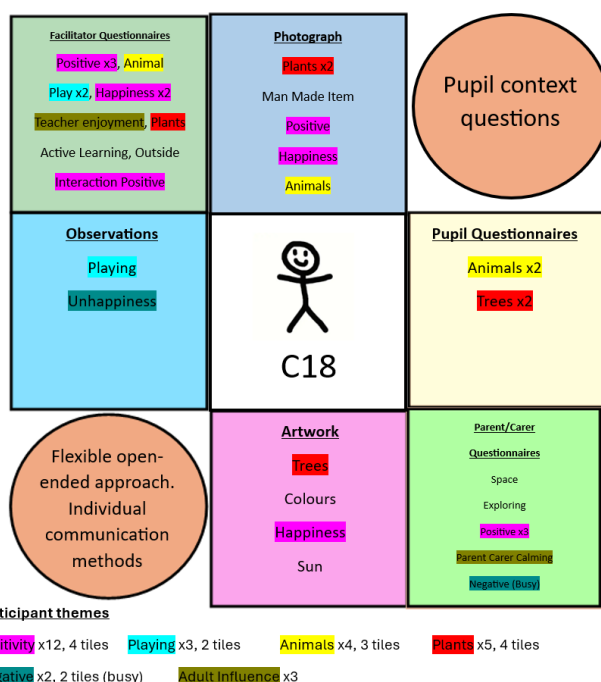


Participant themes

Positivity x4, 3 tiles Playing x2, 2 tiles Sensory x3, 2 tiles Negative x3, 3 tiles

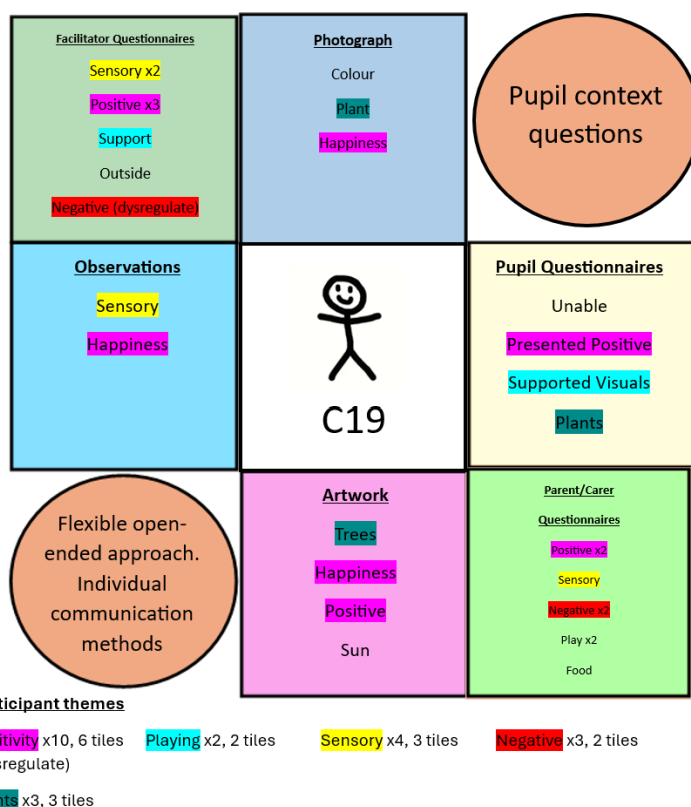
Prevalent themes for participant C17 regarding their perceptions to nature are; Positive (4 times over 3 tiles), Negative (3 times over 3 tiles), Sensory (3 times over 2 tiles) and Playing (2 times over 2 tiles). The themes collected suggest that the individual has some positive perceptions of nature but there are considerations for facilitators to ensure that experiences are positive. The Sensory theme was present indicating that the individual gets positive sensory input by nature however the negative theme referred to the cold weather being the cause. This indicates that the child requires their sensory needs to be considered when planning experiences in natural settings.

C17 Mosaic



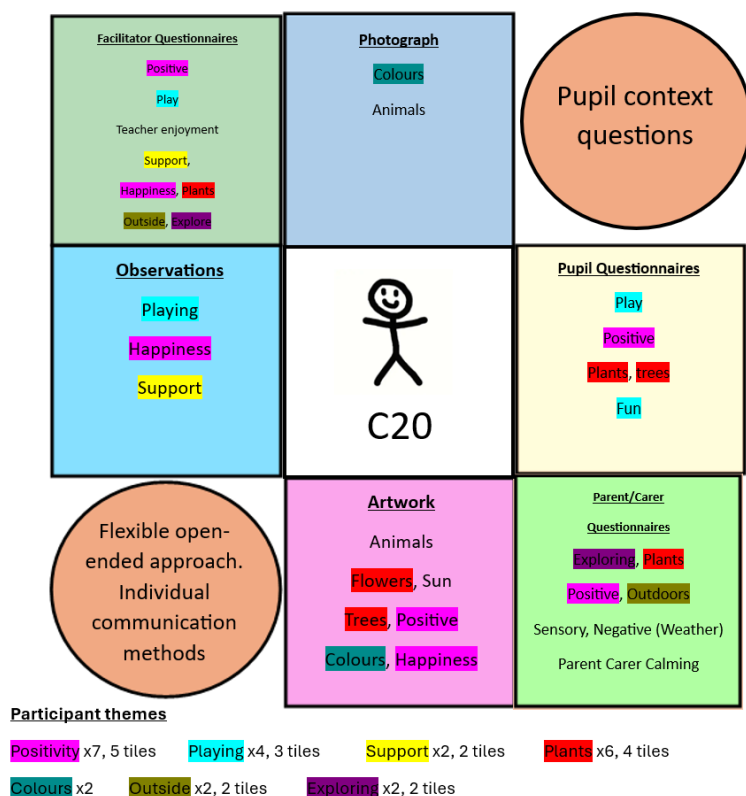
Prevalent themes for participant C18 regarding their perceptions to nature are; Positive (12 times over 4 tiles), Plants (5 times over 4 tiles), Animals (4 times over 3 tiles). With other notable themes being Play (3 times over 2 tiles), Adult Influence (3 times over 2 tiles) and Negative (2 times over 2 tiles). These themes suggest the child has a positive perception of nature with it being a place of play. Animals and plants being an integral part of natural places. Adult influences may influence the child's perceptions of nature. The negative theme was present, and this is due to the busyness of the individual's surroundings and the difficulties in interactions that this may cause.

C18 Mosaic



C19 Mosaic

Prevalent themes for participant C19 regarding their perceptions to nature are; Positive (10 times over 6 tiles), Sensory (4 times over 3 tiles), Plants (3 times over 3 tiles). With other notable themes being Negative (3 times over 2 tiles) and Play 2 times over 2 tiles. These themes present the suggestion that the individual has a positive perception of nature and sees plants as an integral part of nature. The Sensory theme is also present in the child's Mosaic and this suggests that the children get positive sensory input from the natural surrounding they experience. The Negative theme is also present in the Mosaic with the reason being a cause of dysregulation due to sensory needs. This is a consideration for the planning and delivery of the sessions for this individual.



Prevalent themes for participant C20 regarding their perceptions to nature are; Positive (7 times over 5 tiles), Plants (6 times over 4 tiles) and Play (4 times over 3 tiles). Other notable themes include Support, Outside, Colours and Explore (all 2 times over 2 tiles). The themes suggest that the individual has a positive perception of nature, and the child see nature as a place to play and explore. that plants are an integral part of nature. A theme that may be important for the planning of future experiences for this individual is the presences of the Support theme. This theme was present due to the support required by the individual from an adult in regard to interactions with other and the experiences provided.

Appendix 12- Further Analysis of Individual Tiles

Each Individual tile in the Mosaic approach employed in this study presented themes that have the potential to provide an understanding of the subject's perceptions of nature and led to two possible outcomes. The first that we could theoretically build an understanding of the themes present across the population of the group, and secondly, that we could, in theory, build an understanding of the individual's perception of nature. In this subsection, the themes presented in the individual tiles will be analysed. An understanding of the themes from each tile can help support the nuance needed for facilitators to plan experiences effectively.

Tile Table

Themes	PL Playing Running, fun, Sensory play, solo, with other	SENS Sensory	HAP Happiness, Smiling, Laughter	EXP Exploration	INTER Interaction with others	SUP Support Communication, regulation, behaviour	UNHAP Unhappiness Fear, Unsure,	MUD Mud- Splashing
Subjects Grouping	C1, C8, C9, C13, C20	C2, C4, C9, C10, C15	C1, C5, C14, C20	C3, C4, C6, C11, C12, C13 C18, C19, C20	C1, C3, C4, C6, C8, C10, C12, C16, C18, C20	C1, C3, C7, C11, C12, C13, C14, C16, C17, C18 C19 C20	C1, C3, C5, C6, C7, C14, C16, C19, C20	C6, C11, C13, C16, C18, C19, C20
Total Mentions	4	5	4	9	10	12	9	7

Observation tiles

The data found in Image 2 are the themes that were present from observations. The prevalent themes are Playing (15), Happiness (12), Support (10) and Sensory (9). These themes suggest that the subjects enjoyed playing in nature and presented more positive perceptions of nature than negative ones. The other themes, Sensory and Support, may have been more prominent due to the free nature of the other subjects' play, with the increase in noise and movement increasing an individual's sensory load, leading to possible dysregulation. They then required support to manage this change in sensory input. One participant obviously required support to cover their ears and was presenting and concerned by the increased noise. A Teaching Assistant then gave the individual ear defenders, which supported their inclusion in the session. The findings from this tile would be supportive in the planning of future sessions, as appropriate play could be planned for and/or modelled and sensory dysregulation planned for and appropriately supported.

Artwork tiles

Themes	ANI Animals/ Creatures	DISEN Disengaged	FL Flowers	TR Trees	COL Colours- relevant to subject created	HAP Happiness Excited, engaged	POSI Positive- Nice, Good, fun, calm beautiful.	SUN Sun
Subjects Grouping	C1, C8, C9, C13, C20	C2, C4, C9, C10, C15	C1, C5, C14, C20	C3, C4, C6, C11, C12, C13 C18, C19, C20	C1, C3, C4, C6, C8, C10, C12, C16, C18, C20	C1, C3, C7, C11, C12, C13, C14, C16, C17, C18 C19 C20	C1, C3, C5, C6, C7, C14, C16, C19, C20	C6, C11, C13, C16, C18, C19, C20
Total Mentions	4	5	4	9	10	12	9	7

The data found in Image 3 are the themes prevalent in the Artwork tiles. The prevalent themes found were Happiness (12), Colours (10), as well as Positive (9), Trees (9). Most of the subjects engaged well, but some children did not engage in the task. This may have been due to the specific time they were asked to complete the task, or that it just wasn't a way of communicating they prefer. The prevalent themes in this tile again suggest that children have a Positive perception of nature, with nature being a place to be happy. The subjects relate nature to plants and trees and attribute colours to the natural world. These colours again lead to a positive outlook and happy emotions.

Photograph tiles

Themes	COL Colours	OUT Outside	PLAN Plant	MAN Man made item	TR Trees	POSI Positive Nice, Good, fun, great, peaceful	HAP Happiness (tech), engaged, excited	UNHAP Unhappiness Anger, Frustration, disengagement , Fear	ANI Animals/ Creatures	FL Flowers
Subjects Grouping	C1, C7, C14, C19, C20,	C1, C3, C5	C1, C1, C2, C3, C3, C4, C5, C6, C7, C7, C8, C9, C9, C12, C13, C14, C15, C16, C17, C18, C18, C19	C1, C1, C2, C2, C3, C5, C6, C8, C11, C12, C16, C17, C18	C3, C6, C11, C11, C11, C11, C16	C3, C5, C6, C14, C14, C16, C16, C18	C5, C6, C7, C11, C13, C13, C14, C18, C18, C19	C7, C13, C14, C15	C7, C9, C10, C10, C10, C13, C13, C14, C18, C20,	C9, C9, C9, C13, C13, C14
Total Mentions	6	3	22	13	7	8	10	4	10	6

In image 4 are the themes prevalent suggested in the photograph tiles. These are Plants (22), Man-made items (13) and Happiness. Happiness was once again a prevalent theme found in these tiles, with some participants attributing their pictures of their perceived nature as a place of happiness or a place that causes happiness. Many Human-made objects were pictured during the task, with these seemingly being included in the perception of nature for some participants. It seems that some of the participants fuse the notion of 'outside' and anything in it is nature, including any human-made objects. This is an interesting occurrence and again points to the facilitator's understanding of the detail and nuance behind individuals. Do the subjects see these human-made objects as nature? Are they confused with the task at hand? Or do they understand the term nature?

Facilitator Questionnaire tiles

Themes	SENS Sensory	POSI Positive Calming/ Regulating	PL Play Games, Fun	TE Teacher enjoyment Calming, Fresh air, therapeutic , reset.	SUP Support/ Visuals, clothing	ACT L Active Learning Interaction, communication, Variety Activities	INT D Interaction difficulties	INT P Interaction Positives	HAP Happiness Smiling	ANI Animals/ Creatures	OUT Outside	EXP Explore	NEG Negative Weather, cold, rain, dirty	PLAN Plants
Subjects Grouping	C1, C1, C4, C4, C5, C6, C9, C11, C13, C15, C17, C19,	C1, C1, C2, C2, C3, C4, C4, C7, C9, C9, C11, C11, C13, C13, C13, C14, C15, C15, C16, C16, C17, C17, C18, C18, C18, C19, C19, C19, C20,	C1, C1, C2, C2, C2, C3, C3, C5, C6, C7, C7, C8, C9, C11, C11, C13, C13, C14, C14, C16, C16, C17, C17, C18, C18, C18, C19, C19, C19, C20,	C1, C2, C3, C5, C6, C7, C8, C9, C11, C13, C15, C18, C20	C1, C2, C3, C4, C4, C8, C8, C9, C9, C19, C20,	C1, C3, C3, C4, C13, C8, C18	C1, C9	C7, C13, C16, C18,	C3, C5, C6, C7, C8, C13, C13, C14, C16, C18, C18, C20	C1, C3, C3, C4, C8, C9, C14, C15, C18,	C1, C5, C6, C9, C9, C11, C14, C16, C17, C18, C19, C20	C2, C2, C4, C6, C7, C8, C8, C13, C13, C14, C14, C15, C15, C16, C20	C2, C3, C5, C6, C7, C9, C9, C9, C11, C11, C14, C19,	C4, C7, C8, C13, C13, C18, C20,
Total Mentions	13	31	22	13	11	7	2	4	12	9	12	15	12	7

Displayed in Image 5 are the prevalent themes in the Facilitator Questionnaires. These are Positive (31), Play (22) and Explore (15), with Sensory (13), Teacher Enjoyment (13), Negative (12), Outside (12), and Happiness (12). The Positive theme formed here came from a number of indicators that all resulted in positive outcomes for the participants. This may have been nature having a positive effect on emotional regulation, the happiness or presence of enjoyment and/or engagement. While this positivity was common among the population, it is on an individual basis. Positive perceptions are the overwhelming theme in this tile, particularly if this is potentially being combined with Happiness. The themes present suggest that the facilitators believe that children enjoy nature and use nature as a place for play and happiness, supporting the themes present in the observation tiles. However, the facilitators may already be aware of ways they need to support and help children, explaining the presence of the Sensory and Negative themes.

Parent Carer Questionnaire tiles

Themes	PLAY Play	EXP Exploring	POSI Positive Calming, Good	SENS Sensory	PCC Parent Carer Calming	NEG Negative Rain, heat, noise, people	OUT Outdoors	SUP Support	ACT L Active Learning	PL Running	ANI Animals	UNPRED Unpredict able	FOOD Food	PLAN Plants/ Trees
Subjects Grouping	C1, C5, C7, C13, C13, C14, C14, C15, C15, C16, C18	C1, C3, C8, C8, C12, C13, C13, C14, C15, C15, C17, C18, C20,	C1, C2, C3, C4, C4, C4, C5, C5, C5, C7, C7, C9, C9, C10, C11, C11, C13, C13, C13, C14, C14, C14, C14, C14, C15, C15, C16, C16, C17, C18, C18, C18, C19, C19, C20,	C1, C1, C1, C3, C4, C5, C5, C7, C9, C11, C12, C13, C13, C13, C14, C14, C15, C15, C16, C18, C20	C1, C2, C3, C4, C4, C5, C5, C6, C7, C8, C9, C10, C11, C12, C13, C14, C15, C16, C18, C20	C1, C3, C4, C6, C7, C8, C8, C9, C10, C12, C12, C13, C14, C14, C15, C16, C17, C18, C19, C19, C20	C1, C3, C5, C7, C9, C9, C10, C14, C14, C20,	C1, C2, C5, C6, C9	C1, C6	C1, C5, C8, C9, C16, C17, C19, C19	C3, C4, C6, C7, C9, C11, C14, C15, C16,	C2, C10	C2, C9, C13, C16, C17, C19,	C1, C1, C3, C4, C5, C6, C11, C13, C15, C20
Total Mentions	10	14	35	20	20	21	10	5	2	8	9	2	6	10

Image 6 shows the themes found from the Parent and Carer Questionnaires. The prevalent themes found were Positive (35), Negative (21), Sensory 20, and Parent and Carer calming (20). Again, the prevalent themes reported here were positivity, with reports of happiness and enjoyment. Conversely, negative themes are being identified by the parents and carers of the subjects. Many of these negatives include concerns about cold or wet weather and/or overstimulation by noise or other people. The Parent and Carer Themes support some of the themes identified in the Facilitator tiles. This suggests that the Parents and Carers have a good understanding of their young people and have experienced negative outcomes from time spent in nature and are conscious of the sensory challenges young people may encounter. Most of the Parents and Carers reported that they also have positive perceptions of nature, and this could be one explanation for this continuation of positive perceptions in the subjects of the study. If this parent and carer perception is then combined with the Facilitator tile and their positive perceptions, then it could be proposed that the children are surrounded by this positive outlook when referring to nature.

Child Questionnaire tiles

Themes	UN Unab le	PRES POS Presented Positive	PRES NEG Presented negative	SUP Support	SUP V Support Visuals	PLANT Plants	POS Positive	TRIP Trips	NEG Negative	PLAY Play	OUTSIDE Outside	FOOD Food	TOYS Toys	ANI Animals	COL Colours	TREES Trees
Subjects Grouping	C1, C2, C4, C5, C8, C10, C15, C17, C19	C1, C5, C8, C10, C15, C19	C2, C17	C9, C10	C1, C4, C10, C19	C1, C3, C4, C9, C13, C13, C14, C14, C19, C20	C9, C11, C11, C11, C12, C13, C14, C16, C16, C20	C13	C9, C11, C12, C13,	C9, C12, C16, C20, C20	C11, C11, C12, C14	C11	C11, C13	C13, C13, C14, C18, C18	C11	C11, C13, C13, C18, C18, C20
Total Mentions	9	6	2	2	4	9	11	1	4	5	4	1	2	6	1	6

Image 7 outlines the themes found in the Child Questionnaires. These are Positive (11), Plants (9), Unable (9), Animals (9), Trees (6), and Presented Positive (6). Again, positive perceptions are our most common theme, with the descriptions of nature being common among many children. The source of this positive perception is debatable and individual to every child. The influence of important adults in the children's lives should not be overlooked, however.

Appendix 13: Ethical Approval and School Approval

From: Williams3, Lisa <Lisa.Williams3@taw.org.uk>

Sent: 29 September 2026 12:12

To: Bradney, Chris <Chris.Bradney@taw.org.uk>

Subject: Study

Good afternoon Chris,

I confirm that you have permission to conduct your research study on school premises, with children within the school (as per parental consents)

Kind Regards

Lisa Williams
Headteacher

Haughton School
Queen Street
Madeley
Telford
Shropshire
TF7 4BW
Tel: (01952) 387540
Email: lisa.williams3@taw.org.uk
www.haughtonschool.co.uk



APPLICATION FOR ETHICAL APPROVAL

RESEARCH STUDENTS

This form is to be completed by the student within **SIX** months for full-time students and **TWELVE** months for part time students, after the commencement of the research degree or following progression to Part Two of your course.

Once complete, submit this form via the **MyTSD Doctoral College Portal** at (<https://mytsd.uwtsd.ac.uk>).

This document is also available in Welsh.

RESEARCH STAFF ONLY

All communications relating to this application during its processing must be in writing and emailed to pgresearch@uwtsd.ac.uk, with the title 'Ethical Approval' followed by your name.

STUDENTS ON UNDERGRADUATE OR TAUGHT MASTERS PROGRAMMES should submit this form (and receive the outcome) via systems explained to you by the supervisor/module leader.

In order for research to result in benefit and minimise risk of harm, it must be conducted ethically. A researcher may not be covered by the University's insurance if ethical approval has not been obtained prior to commencement.

The University follows the OECD Frascati manual definition of **research activity**: "creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society, and the use of this stock of knowledge to devise new applications". As such this covers activities undertaken by members of staff, postgraduate research students, and both taught postgraduate and undergraduate students working on dissertations/projects.

The individual undertaking the research activity is known as the "principal researcher".

Ethical approval is not required for routine audits, performance reviews, quality assurance studies, testing within normal educational requirements, and literary or artistic criticism.

Please read the notes for guidance before completing ALL sections of the form.

This form must be completed and approved prior to undertaking any research activity. Please see Checklist for details of process for different categories of application.

SECTION A: About You (Principal Researcher)

1	Full Name:	Chris Bradney			
2	Tick all boxes that apply:	Member of staff:	☐	Honorary research fellow:	☐
	Undergraduate Student	☐	Taught Postgraduate Student	☐	Postgraduate Research Student ☒
3	Institute/Academic Discipline/Centre:	University of Wales Trinity Saint Davids			
4	Campus:	Carmarthen			
5	E-mail address:	2206370@student.uwtsd.ac.uk			
6	Contact Telephone Number:	07847717261			
	For students:				

7	Student Number:	2206370
8	Programme of Study:	MA Outdoor Education
9	Director of Studies/Supervisor:	Maria Jose Trevino Gonzalez

SECTION B: Approval for Research Activity

1	Has the research activity received approval in principle? (please check the Guidance Notes as to the appropriate approval process for different levels of research by different categories of individual)	YES	☒	NO	☐
					Date
2	If Yes, please indicate source of approval (and date where known): <i>Approval in principle must be obtained from the relevant source prior to seeking ethical approval</i>	Research Degrees Committee	☐		
		Institute Research Committee	☐		
		Other (write in) Maria Jose Trevino Gonzalez	☒		10-01-25

SECTION C: Internal and External Ethical Guidance Materials

	Please list the core ethical guidance documents that have been referred to during the completion of this form (including any discipline-specific codes of research ethics, location-specific codes of research ethics, and also any specific ethical guidance relating to the proposed methodology). Please tick to confirm that your research proposal adheres to these codes and guidelines. You may add rows to this table if needed.				
1	UWTSD Research Ethics & Integrity Code of Practice				☒
2	UWTSD Research Data Management Policy				☒
3	[List any other relevant documents here]				☐

SECTION D: External Collaborative Research Activity

If there are external collaborators then you should gain consent from the contact persons to share their personal data with the university. If there are no external collaborators then leave this section blank and continue to section E.

1	Institution	
2	Contact person name	
3	Contact person e-mail address	
4	Is your research externally funded?	YES ☐ NO ☒
5	Are you in receipt of a KESS scholarship?	YES ☐ NO ☒
6	Are you specifically employed to undertake this research in either a paid or voluntary capacity?	Voluntary YES ☐ NO ☒
7		Employed YES ☐ NO ☒
8	Is the research being undertaken within an existing UWTSD Athrofa Professional Learning Partnership (APLP)?	If YES then the permission question below does not need to be answered. YES ☐ NO ☒

9	Has permission to undertake the research has been provided by the partner organisation?	(If YES attach copy) If NO the application cannot continue	YES	☐	NO	☒
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Where research activity is carried out in collaboration with an external organisation

10	Does this organisation have its own ethics approval system?	YES	☐	NO	☒
	If Yes, please attach a copy of any final approval (or interim approval) from the organisation (this may be a copy of an email if appropriate).				

SECTION E: Details of Research Activity

1	Indicative title:	What are the perceived positive and negative and impacts of natural settings on children with additional learning needs? Perspectives from the child, carer and facilitator.			
2	Proposed start date:	01/12/2024	Proposed end date:	01/04/2026	
	Introduction to the Research (maximum 300 words per section) Ensure that you write for a <u>Non-Specialist Audience</u> when outlining your response to the points below: <i>Purpose of Research Activity</i> <i>Proposed Research Question</i> <i>Aims of Research Activity</i> <i>Objectives of Research Activity</i> Demonstrate, briefly, how Existing Research has informed the proposed activity and explain <i>What the research activity will add to the body of knowledge</i> <i>How it addresses an area of importance.</i>				
3	Purpose of Research Activity The purpose of the study is to provide an understanding of the positive and negative impacts that natural places have upon children with additional learning needs. Data will be collected from the children themselves using the mosaic method of data collection along with data being collected from carers and facilitators. The study will be adding to a research base regarding a demographic of children that is often overlooked and ignored. The study could provide professionals with a way of collecting data from children with additional learning needs and therefore adding their voices to curriculum design. <i>(this box should expand as you type)</i>				
4	Research Question What are the perceived positive and negative and impacts of natural settings on children with additional learning needs? <i>(this box should expand as you type)</i>				
5	Aims of Research Activity				

	To gain an understanding of the positive and negative impacts of natural environments on children with additional needs. To provide an insight into how children perceive natural spaces affect them. To collect data from careers and facilitators to and depth, context and efficacy to the children's data, To use data collected to inform curriculum and teaching practices. To provide professionals a way of collecting holistic data from children with additional learning needs. (this box should expand as you type)
6	Objectives of Research Activity To collect the children data using the mosaic approach to communication. To collect facilitator perceptions. To collect career perceptions. To analyse these different sources of information and to collate them into providing individual insight into the children's perceived relationship with natural environments. To provide a way for children to express their voice and have influence over the curriculums they are having provided to them and experiencing. (this box should expand as you type)
	Proposed methods (maximum 600 words) Provide a brief summary of all the methods that may be used in the research activity, making it clear what specific techniques may be used. If methods other than those listed in this section are deemed appropriate later, additional ethical approval for those methods will be needed. You do not need to justify the methods here, but should instead describe how you intend to collect the data necessary for you to complete your project.
7	The children will feed back their perceived positive and negative opinions of natural settings the how these setting affect them. This data will be collected through the use of the Mosaic approach. This approach as outlined by (Clark and Moss, 2011) Uses a number of different, "tiles", to create a mosaic or a full picture of the children's desired communication. These tiles, or sections of data, could consist of artwork, observations, child conferencing, child led tours, mapping, role playing, parent perceptions and practitioner perceptions. The tasks to create the tiles will be adapted and differentiated to suit the developmental level and desired communication style of the particular pupils. Each child will already have specific communication needs and methods with these being utilised in the study. These may include communication aids such as iPads, pecs books, or language frames. The data will either be collected during Forest school sessions or in classroom during other appropriate times. Data will also be collected in the form of questionnaires. This data will be collected from careers and facilitators. (this box should expand as you type)
	Location of research activity Identify all locations where research activity will take place.
8	Haughton School, Queens Street, Telford, England. Forest school area and or classroom environments.

	(this box should expand as you type)
	Research activity outside of the UK If research activity will take place overseas, you are responsible for ensuring that local ethical considerations are complied with and that the relevant permissions are sought. Specify any local guidelines (e.g. from local professional associations/learned societies/universities) that exist and whether these involve any ethical stipulations beyond those usual in the UK (provide details of any licenses or permissions required). Also specify whether there are any specific ethical issues raised by the local context in which the research activity is taking place, for example, particular cultural and/or legal sensitivities or vulnerabilities of participants. If you live in the country where you will do the research then please state this.
9	(this box should expand as you type)

10	Use of documentation not in the public domain: Are any documents NOT publicly available?	NO	☒
		YES	☐
11	If Yes, please provide details here of how you will gain access to specific documentation that is not in the public domain and that this is in accordance with the current data protection law of the country in question and that of England and Wales. (this box should expand as you type)		

	Does your research relate to one or more of the seven aims of the Well-being of Future Generations (Wales) Act 2015?	YES	NO
12	A prosperous Wales	☐	☒
13	A resilient Wales	☐	☒
14	A healthier Wales	☐	☒
15	A more equal Wales	☐	☒
16	A Wales of cohesive communities	☐	☒
17	A Wales of vibrant culture and thriving Welsh language	☐	☒
18	A globally responsible Wales	☐	☒
19	If YES to any of the above, please give details:		
	(this box should expand as you type)		

SECTION F: Scope of Research Activity

	Will the research activity include:	YES	NO
1	Use of a questionnaire or similar research instrument?	☒	☐
2	Use of interviews?	☒	☐

3	Use of focus groups?	☒	☐
4	Use of participant diaries?	☐	☒
5	Use of video or audio recording?	☒	☐
6	Use of computer-generated log files?	☐	☒
7	Participant observation with their knowledge?	☒	☐
8	Participant observation without their knowledge?	☐	☒
9	Access to personal or confidential information without the participants' specific consent?	☐	☒
10	Administration of any questions, test stimuli, presentation that may be experienced as physically, mentally or emotionally harmful / offensive?	☐	☒
11	Performance of any acts which may cause embarrassment or affect self-esteem?	☐	☒
12	Investigation of participants involved in illegal activities?	☐	☒
13	Use of procedures that involve deception?	☐	☒
14	Administration of any substance, agent or placebo?	☐	☒
15	Working with live vertebrate animals?	☐	☒
16	Procedures that may have a negative impact on the environment?	☐	☒
17	Other primary data collection methods. Please indicate the type of data collection method(s) below.	☒	☐
	Details of any other primary data collection method: Mosaic method of data collection will be employed to collect pupil voice. Pictures. Photos. Work produced. Questionnaires (this box should expand as you type)		

If NO to every question, then the research activity is (ethically) low risk and **may** be exempt from **some** of the following sections (please refer to Guidance Notes).

If YES to any question, then no research activity should be undertaken until full ethical approval has been obtained.

SECTION G: Intended Participants

If there are no participants then do not complete this section, but go directly to section H.

	Who are the intended participants:	YES	NO
1	Students or staff at the University?	☐	☒
2	Adults (over the age of 18 and competent to give consent)?	☒	☐
3	Vulnerable adults?	☐	☒
4	Children and Young People under the age of 18? (Consent from Parent, Carer or Guardian will be required)	☒	☐
5	Prisoners?	☐	☒
6	Young offenders?	☐	☒
7	Those who could be considered to have a particularly dependent relationship with the investigator or a gatekeeper?	☐	☒

8	People engaged in illegal activities?	☐	☒
9	Others. Please indicate the participants below, and specifically any group who may be unable to give consent.	☐	☒
	Details of any other participant groups: (this box should expand as you type)		

Participant numbers and source Provide an estimate of the expected number of participants. How will you identify participants and how will they be recruited?	
10	How many participants are expected? 20-40 (this box should expand as you type)
11	Who will the participants be? Key Stage 1 and or Key Stage 2 children who are pupils at Houghton School. A school for children with additional learning needs. Possibly children at another additional needs learning school aimed at children working in KS3 and KS4 and a Wrekin Forest School additional needs play group. (this box should expand as you type)
12	How will you identify the participants? Through conversations with staff and which children will be participating in forest school interventions. (this box should expand as you type)

Information for participants:		YES	NO	N/A
13	Will you describe the main research procedures to participants in advance, so that they are informed about what to expect?	☒	☐	☐
14	Will you tell participants that their participation is voluntary?	☒	☐	☐
15	Will you obtain written consent for participation?	☒	☐	☐
16	Will you explain to participants that refusal to participate in the research will not affect their treatment or education (if relevant)?	☒	☐	☐
17	If the research is observational, will you ask participants for their consent to being observed?	☒	☐	☐
18	Will you tell participants that they may withdraw from the research at any time and for any reason?	☒	☐	☐
19	With questionnaires, will you give participants the option of omitting questions they do not want to answer?	☒	☐	☐
20	Will you tell participants that their data will be treated with full confidentiality and that, if published, it will not be identifiable as theirs?	☒	☐	☐
21	Will you debrief participants at the end of their participation, in a way appropriate to the type of research undertaken?	☒	☐	☐
22	If NO to any of above questions, please give an explanation (this box should expand as you type)			

Information for participants:		NO	
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		YES		N/A
24	Will participants be paid?	☐	☒	☐
25	Is specialist electrical or other equipment to be used with participants?	☐	☒	☐
26	Are there any financial or other interests to the investigator or University arising from this study?	☐	☒	☐
27	Will the research activity involve deliberately misleading participants in any way, or the partial or full concealment of the specific study aims?	☐	☒	☐
28	If YES to any question, please provide full details			
(this box should expand as you type)				

SECTION H: Anticipated Risks

Outline any anticipated risks that may adversely affect any of the participants, the researchers and/or the University, and the steps that will be taken to address them. If you have completed a full risk assessment (for example as required by a laboratory, or external research collaborator) you may append that to this form.						
1	Full risk assessment completed and appended?	<table border="1"> <tr> <td>Yes</td> <td>☐</td> </tr> <tr> <td>No</td> <td>☒</td> </tr> </table>	Yes	☐	No	☒
Yes	☐					
No	☒					
2	Risks to participants For example: sector-specific health & safety, emotional distress, financial disclosure, physical harm, transfer of personal data, sensitive organisational information					
	Risk to participants: Traditional physical risks associated with forest school activities. Emotional distress Discomfort from weather. (this box should expand as you type)	How you will mitigate the risk to participants: Schools risk assessment will be followed regarding the use of the forest school area. For example; appropriate tools used. Area checked for hazards (fungus, animal droppings). Children's interaction will be guided by forest school ethos. Controlled and managed risks regarding tree climbing, building or tool use. If any participants decide to withdraw from the sessions for any reason, their wishes will be fully respected and the session will cease. All safeguarding regarding disclosures and concerns will be followed in line with the Child Safeguarding policy at Houghton School. All efforts will be made to provide children with appropriate clothing and the appropriate environment to feel comfortable in any climatic situation. (this box should expand as you type)				
3	If research activity may include sensitive, embarrassing or upsetting topics (e.g. sexual activity, drug use) or issues likely to disclose information requiring further action (e.g. criminal activity), give details of the procedures to deal with these issues, including any support/advice (e.g. helpline numbers) to be offered to participants. Note that where applicable, consent procedures should					

	make it clear that if something potentially or actually illegal is discovered in the course of a project, it may need to be disclosed to the proper authorities	
	Research will include individual perspectives and relationships with natural places. All data will be respected and treat anonymously, however some will be linked as the data will correspond between children, carers and facilitators. <i>(this box should expand as you type)</i>	
4	Risks to the investigator For example: personal health & safety, physical harm, emotional distress, risk of accusation of harm/impropriety, conflict of interest	
	Risk to the investigator: Physical Harm from child. Risk of accusation Conflict of interest <i>(this box should expand as you type)</i>	How you will mitigate the risk to the investigator: Present school protocols will be followed regarding the avoidance of crisis moments with CPI. Crisis prevention model being implemented by fully trained staff. Investigator will always be in a public space in the presence of other staff and professionals. Investigator works at the location. Ethical guidelines will be followed regarding the collection, analysis and interpretation of data. <i>(this box should expand as you type)</i>
5	University/institutional risks For example: adverse publicity, financial loss, data protection	
	Risk to the University: Data protection Adverse publicity <i>(this box should expand as you type)</i>	How you will mitigate the risk to the University: All data to be treated anonymously following the correct ethical and data protection guidelines as set out by the university and Haughton School itself. All ethical guidelines followed the boards and supervisors consulted regarding any concerns. <i>(this box should expand as you type)</i>
6	Environmental risks For example: accidental spillage of pollutants, damage to local ecosystems	
	Risk to the environment: Traditional physical risks associated with forest school activities. Damage to ecosystem <i>(this box should expand as you type)</i>	How you will mitigate the risk to environment: Schools risk assessment will; be followed regarding the use of the forest school area. For example; appropriate tools used. Area checked for hazards (fungus, animal droppings). Children's interaction will be guided by forest school ethos. Controlled and managed risks regarding tree climbing, building or tool use. The ecosystem will be guard by the traditional forest school ethos. Children and staff to be reminded of the expectation and rules around use of the area.

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(this box should expand as you type)

Disclosure and Barring Service				
	If the research activity involves children or vulnerable adults, a Disclosure and Barring Service (DBS) certificate must be obtained before any contact with such participants.	YES	NO	N/A
7	Does your research require you to hold a current DBS Certificate?	☒	☐	☐
8	If YES, please give the certificate number. If the certificate number is not available please write "Pending"; in this case any ethical approval will be subject to providing the appropriate certificate number.			

SECTION I: Feedback, Consent and Confidentiality

1	Feedback What de-briefing and feedback will be provided to participants, how will this be done and when?
	Feedback will be given to the parents, facilitators and children where appropriate. This will either be done in the form of written letter and or a face-to-face discussion. This will be completed after all the tiles of data have been analysed and when the questionnaires are processed <i>(this box should expand as you type)</i>
2	Informed consent Describe the arrangements to inform potential participants, before providing consent, of what is involved in participating. Describe the arrangements for participants to provide full consent before data collection begins. If gaining consent in this way is inappropriate, explain how consent will be obtained and recorded in accordance with prevailing data protection legislation.
	Consent will be gained from appropriate adults, carers, parents and children. A letter will be sent outlining the aims and ways of collecting data from the children. <i>(this box should expand as you type)</i>
3	Confidentiality / Anonymity Set out how anonymity of participants and confidentiality will be ensured in any outputs. If anonymity is not being offered, explain why this is the case.
	All children, facilitators and carers will be given a number and letter linking the sources but also ensuring their identity is protected. The data collected will only be shared with parents/ carers and the children involved in the research. All data collected will be contained in secure systems within Houghton school and the University. <i>(this box should expand as you type)</i>

SECTION J: Data Protection and Storage

	Does the research activity involve personal data (as defined by the General Data Protection Regulation 2016 "GDPR" and the Data Protection Act 2018 "DPA")?	YES	NO
1	"Personal data" means any information relating to an identified or identifiable natural person ("data subject"). An identifiable natural person is one who can be identified, directly or indirectly, in particular by reference to an identifier such as a name, an identification number, location data, an online identifier or to one or more factors specific to the physical, physiological, genetic, mental, economic, cultural or social identity of that natural person. Any video or audio recordings of participants is considered to be personal data.	☒	☐

[illegible]

	Will data from the research activity (collected data, drafts of the thesis, or materials for publication) be stored in any of the following ways?	YES	NO
5	Manual files (i.e. in paper form)?	☒	☐
6	University computers?	☐	☒
7	Private company computers?	☒	☐
8	Home or other personal computers?	☒	☐
9	Laptop computers/ CDs/ Portable disk-drives/ memory sticks?	☐	☒
10	"Cloud" storage or websites?	☒	☐
11	Other – specify:	☐	☐
12	For all stored data, explain the measures in place to ensure the security of the data collected, data confidentiality, including details of backup procedures, password protection, encryption, anonymisation and pseudonymisation:		
	All Data will be collected and stored on the Houghton School Sharepoint cloud system. This system is encrypted and data is protected by the Telford and Wrekin Local Authority Technical services employed by Houghton School. All systems can only be connected by particular workplaces laptop using a proxy and are all password protected. Data will be anonymised at source with the researcher knowing the identity of the subject, before this is shared with pupils, parents and carers. The data will also be stored within the Universities secure databases. <i>(this box should expand as you type)</i>		

	Data Protection		
	Will the research activity involve any of the following activities:	YES	NO
13	Electronic transfer of data in any form?	☐	☒

14	Sharing of data with others at the University outside of the immediate research team?	☐	☒
15	Sharing of data with other organisations?	☒	☐
16	Export of data outside the UK or importing of data from outside the UK?	☐	☒
17	Use of personal addresses, postcodes, faxes, emails or telephone numbers?	☐	☒
18	Publication of data that might allow identification of individuals?	☐	☒
19	Use of data management system?	☒	☐
20	Data archiving?	☒	☐
21	If YES to any question, please provide full details, explaining how this will be conducted in accordance with the GDPR and Data Protection Act (2018) (and any international equivalents, where appropriate): All data will be stored on the appropriate Haughton School storage system. This will be supplied by Telford and Wrekin Local Authority Technical support. Data will also be stored in the University systems. Overall outcomes will be shared with school to provide pupil voices of nature sessions, all data will be anonymous. <i>(this box should expand as you type)</i>		
22	List all who will have access to the data generated by the research activity:		
	Chris Bradney (researcher) <i>(this box should expand as you type)</i>		
23	List who will have control of, and act as custodian(s) for, data generated by the research activity:		
	Chris Bradney (researcher) <i>(this box should expand as you type)</i>		
24	Give details of data storage arrangements, including security measures in place to protect the data, where data will be stored, how long for, and in what form. Will data be archived – if so how and if not why not.		
	All data will be stored on the Haughton School Sharepoint Cloud System this data will be protected by the data protection systems outlined in Haughton school's policy. This will be supported by the Telford and Wrekin Local Authority technical support. Data will be disposed of after the completion of the research assignment. <i>(this box should expand as you type)</i>		
25	Please indicate if your data will be stored in the UWTSD Research Data Repository (see https://researchdata.uwtsd.ac.uk/). If so please explain. <i>(Most relevant to academic staff)</i>		
	No as this is an initial research project. <i>(this box should expand as you type)</i>		
26	Confirm that you have read the UWTSD guidance on data management (see https://www.uwtsd.ac.uk/library/research-data-management/)	YES	☒
27	Confirm that you are aware that you need to keep all data until after your research has completed or the end of your funding	YES	☒

SECTION K: Declaration

The information which I have provided is correct and complete to the best of my knowledge. I have attempted to identify any risks and issues related to the research activity and acknowledge my obligations and the rights of the participants. In submitting this application I hereby confirm that I undertake to ensure that the above named research activity will meet the University's Research Ethics and Integrity Code of Practice which is published on the website: https://www.uwtsd.ac.uk/research/research-ethics/		
1	Signature of applicant:	Chris Bradney
		Date: 18/11

For STUDENT Submissions:

2	Director of Studies/Supervisor:	Maria Jose Trevino Gonzalez	Date: 10/01/25
3	Signature:		

For STAFF Submissions:

4	Academic Director/ Assistant Dean:		Date:
5	Signature:		

Checklist: Please complete the checklist below to ensure that you have completed the form according to the guidelines and attached any required documentation:

☒	I have read the guidance notes supplied before completing the form.
☒	I have completed ALL RELEVANT sections of the form in full.
☒	I confirm that the research activity has received approval in principle
☒	I have attached a copy of final/interim approval from external organisation (where appropriate)
☒	I have attached a full risk assessment (where appropriate) ONLY TICK IF YOU HAVE ATTACHED A FULL RISK ASSESSMENT
☒	I understand that it is my responsibility to ensure that the above named research activity will meet the University's Research Ethics and Integrity Code of Practice.
☒	I understand that before commencing data collection all documents aimed at respondents (including information sheets, consent forms, questionnaires, interview schedules etc.) must be confirmed by the DoS/Supervisor, module tutor or Academic Director.

RESEARCH STUDENTS ONLY

Once complete, submit this form via the **MvTSD Doctoral College Portal** at (<https://mvtsd.uwtsd.ac.uk>).

RESEARCH STAFF ONLY

All communications relating to this application during its processing must be in writing and emailed to pgresearch@uwtsd.ac.uk, with the title 'Ethical Approval' followed by your name.

STUDENTS ON UNDERGRADUATE OR TAUGHT MASTERS PROGRAMMES should submit this form (and receive the outcome) via systems explained to you by the supervisor/module leader.

Appendix 14: Sample Consent Forms

Teacher Consent Form

Dear Sir or Madam,

As part of my master's degree in Outdoor Education, I am completing a research study into the positive and negative impacts that natural places may have on children. Haughton School and I value the opinions of all the children and could potentially use this to inform our outdoor sessions.

I aim to collect the children's views, opinions and experiences as well as those of yourself and parents or carers who care for the children.

To collect the points of view and experiences of the children, I will be asking them to create artwork, take pictures of natural places, take teachers on guided tours and to talk about their experiences of natural places in both positive and negative contexts.

It would be extremely valuable if you would consent to contributing to a staff conferencing session. This is where I will collect your perceptions and experiences of the children in natural scenarios.

All information will be confidential and kept totally anonymous. Any pictures, video or sound recordings that are collected will not include any faces or other distinguishing features, so that no person will be able to be identified. All the information is carefully stored under the University of Wales Trinity Saint David's Data Protection software and is password protected. All data collected will be deleted after a ten-year period in accordance with the University of Wales Trinity Saint Davids guidelines. More information can be found here <https://www.uwtsd.ac.uk/research/research-integrity-and-ethics>.

If later you wish to withdraw from the study, you will be able to do this at any time. The children themselves or the child's parents will also be able to withdraw at any time.

If you have any questions about the study, please don't hesitate to contact me at chris.bradney@taw.org.uk.

You can also contact my supervisor, Maria Gonzalez from the University of Wales Trinity Saint Davids at m.tgonzalez@uwtsd.ac.uk.

If you would like you would like to take part in the study, please sign the consent form below.

Thank you for your support, kind regards.

Chris Bradney

Consent Form

If you provide consent to participate, please initial each affirmation below and add your signature and details.

	Please initial
I give my consent to be part of the research study described in the letter/information sheet above.	
I understand that my words may be included in the study. However, all information will be collected confidentially with full anonymity.	
I understand that personal data will remain confidential and that all efforts will be made to ensure that I cannot be identified in reports or any further outputs.	
I understand that I can withdraw from the study at any time, without giving a reason and without penalty or my legal rights being affected.	

Sign to consent:

Print name:

Parents and Carers Consent Form

Dear Parents and Carers,

As part of my master's degree in Outdoor Education, I am completing a research study into the positive and negative impacts that natural places may have on children. Haughton School and I value the opinions of all the children and could potentially use this to inform our outdoor sessions.

I aim to collect the children's views, opinions and experiences as well as those of yourself and the school staff that work with the children. This will be completed as part of the children's normal outdoor learning sessions. Information related to the demographics of children will also be collected.

To collect the points of view and experiences of the children, I will be asking them to create artwork, take pictures of natural places, take teachers on guided tours and to talk about their experiences of natural places in both positive and negative contexts.

Staff members at Haughton School will be asked to take part in staff conferencing. This is where I will collect their perceptions and experiences. I will be asking the staff to recall and explain their experiences of the children in natural scenarios.

I will also be seeking to gather information from yourselves, the parents and carers of the children. This will be in the form of a short questionnaire in which I will be asking you to recall and explain the positive and negative experiences you have witnessed your child have.

All information will be confidential and kept totally anonymous. Any pictures that are taken will not include any faces so that no person will be able to be identified. All the information is carefully stored under the University of Wales Trinity Saint David's Data Protection software and is password protected. All data collected will be deleted after a ten-year period in accordance with the University of Wales Trinity Saint Davids guidelines. More information can be found here <https://www.uwtsd.ac.uk/research/research-integrity-and-ethics>.

If later you wish to withdraw your children from the study, you will be able to do this at any time. The children themselves will also be able to withdraw at any time.

If you have any questions about the study, please don't hesitate to contact me at chris.bradney@taw.org.uk.

You can also contact my supervisor, Maria Gonzalez from the University of Wales Trinity Saint Davids at m.tgonzalez@uwtsd.ac.uk.

If you would like your child to take part in the study, please sign the consent form below.

Thank you for your support. Kind regards.

Mr Bradney

Consent Form

If you provide consent for your child to participate, please initial each affirmation below and add your signature and details.

	Please initial
I give my consent for my child to be part of the research study described in the letter/information sheet above.	
I understand that my child's words and work may be included in the study. However, all information will be collected confidentially with full anonymity.	
I understand that personal data will remain confidential and that all efforts will be made to ensure my child cannot be identified in reports or any further outputs.	
I understand that I can withdraw my child from the study at any time, without giving a reason and without penalty or my child's legal rights being affected.	
I understand that my child can withdraw themselves from the study at any time, without giving a reason and without penalty or my child's legal rights being affected.	

Sign to consent:

Print name: