Submission date: 18th October 2020

LEVEL 3 CERTIFICATE FOR FOREST SCHOOL LEADERS

PORTFOLIO TEMPLATE

[redacted]

THE HIVE AMAZING OUTDOOR MISSIONS

LEVEL 3 CERTIFICATE FOR FOREST SCHOOL LEADERS
PORTFOLIO ASSESSMENT CRITERIA & GUIDANCE

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LEVEL 3 PORTFOLIO TEMPLATE
UNIT 1 - FOREST SCHOOL PROGRAMME DELIVERY

PLEASE NOTE: the information, planning and reflections in this document are based on 4 FS sessions run in Feb/ March 2020. Due to Covid-19 the group time was cut short by 2 weeks. Another group has begun in Autumn term 2020, but with different children as they all have to be from the same school bubble. The other lesson plans, reflections and photos are from these Autumn sessions, hence some overlap in activities in the planning and different children in the photos.

Q1. Document the planning and delivery of your 6 Forest School sessions

To answer this question, you need to show the logbook evidence of your delivery of 6 Forest School sessions. Your logbook will also need to include evidence of:

1. *Your planning process*
2. *Your ability to reflect participants' interests and needs and be flexible*
3. *Your ability to include progression from one session to the next*

⇒ You can include your logbook electronically in this document or you can submit it as a separate document, electronically or as a printout.

See Appendix 1: Forest school sessions planning (Spring 2020)
See Appendix 1a: Forest school sessions planning (Autumn 2020)

See appendix 3: reflection diaries of FS sessions (Spring 2020)
See appendix 3 a: reflection diaries FS sessions (Autumn 2020)

See appendix 9: planning and risk assessment of Forest School Assessment day 1 hour session.

Q2. Assess the impact of your Forest School sessions on 3 participants' learning and development

To answer this question, you need to fill in the template provided for each of the 3 participants (see details below). The template includes the following:

1. *Baseline assessment for each of the 3 participants at the start of the 6 sessions*
2. *Evidence of observations of the participants during each session*
3. *Evaluation of observations to assess the impact of the sessions on the 3 participants*
4. *Recommendations for extending their learning and development in future sessions*

See appendix 2: assessment of impact and development on 3 children in Forest Schools sessions.

See appendix 3 and 3a: reflection diaries of FS sessions

Q3. Conduct an evaluation of your 6 Forest School sessions

To answer this question, you need to evaluate each of your 6 FS sessions, using the table provided below. Please bear in mind the following in your answers:

- *Participant experience*
- *Communication of the ethos of FS*
- *Effectiveness of your session planning*
- *Resourcing*
- *Site management*

Summary evaluation

This group were chosen from across the school by teaching staff because of specific needs. The FS sessions rationale was to directly address some of those behaviours and needs: lack of focus, difficulties self-regulating, anger management, struggling working in teams as well as children with ASD. The sessions tired to address some of these needs by showing children what they could do, what they were capable of and thus build self-confidence and engagement.

Any tasks or activities aimed to be short, manageable and achievable, so that they felt a sense of accomplishment.Simple things like using ID charts and being able to remember names of plants gave the children an enormous amount of pleasure: they are not used to being the experts in class and they were so proud of themselves remembering tricky names of plants.

Lots of physical activities, team/ wide games and climbing was factored in as many of them enjoy PE and struggle to manage themselves physically in a classroom. They really enjoyed playing games like Eagle eyes and 'you're only safe if' with the

adults, but also copied and adapted these games when playing by themselves (which often involved the name game + 'with wellies on'!).

Many of these children find difficult to interact with peers appropriately in school, so team work was planned in such a way that there was space for them to have time away if they needed it. They loved being able who to choose to work with on an activity (something they don't often have in class) and some friendships were formed between children I wouldn't have imagined. They really seemed to step up to the challenge if it concerned safety - they were so careful with each other during blindfold guiding and spotting while tree climbing.

As these are older primary children there is very little opportunity for free play at school and this was an element that they took time to get into, as they are not used to the freedom to choose. When they did start to embrace this, I was surprised by their delight in role play, their willingness to play games that amongst other peers would be considered immature, like pretending to have tea parties, painting and using magic sticks.

Session 1 (intro)

Baseline assessment of the group as a whole	The 10 participants were chosen using a number of criteria: KS2 age range; additional needs due to SEN (including ASD and EAL); social, emotional and behavioural issues. All of the participants find it hard to maintain focus in a typical classroom setting and often find themselves being removed from class due to behaviour. Some of the group have low self confidence and struggle to share ideas or participate in team activities. As a one form entry primary school, the children all know each other even if they are not in the same classes. Whilst there are some common challenges amongst the group, they have specific and individual histories and needs that I am aware of. None of the group visit parks or wild areas regularly (a minority have only been to non urban areas on a handful of occasions), so Forest School is an unfamiliar environment for them.

How did what happened compare to your plan?	I had planned to teach some basic knots, which the children had expressed an interest in. They thought this would be great in terms of making their own dens and rope swings. It became clear quite quickly that many in the group had very low focus, concentration and resilience, which are quite important skills for knot tying. It was tricky striking the balance of encouraging them to persevere and help each other out, along with knowing when it is better to leave something and come back to it. Knowing the children can display some quite volatile behaviours, I switched from the plan to games, team activities and lots of freedom to simply explore the area. So, I ended up setting up more of the camp than I intended, but the children were helpful in packing it up.
What went well and why?	The element of something different to normal meant they were all very excited. They enjoyed that they were a group from across the school and spending time outside a classroom. They loved 'dressing up' in waterproofs and wellies and spent much of the time simply trying out new footwear (by jumping up and down in them!). Snacks were very popular as was a lack of writing, because both of these don't happen in class. They really love wide games and the freedom to move as they want. They enjoy collecting natural debris- I will include a treasure hunt at the next session.
What didn't go well and why?	Knot tying! Not something I'd try again in a first meeting with children with these behaviours. They have very low self esteem and low focus, so something that takes perseverance to get right can lead to a vicious circle of them being unable to focus, thus unable to complete the task, feeling like a failure and becoming angry. I aim to keep things game based and make sure that there are tasks which are achievable
What will you do differently for the next session as a result?	Start with games, and things which ensure they can build trust in team or small group games. Provide lots of opportunity for free movement (running, tree climbing) and make sure anything which requires explanation is short. I'll make more opportunities to collect natural objects and link this with identification.

Session 2

How did what happened compare to your plan?	Mostly the session followed the plan, with some modifications based on the previous session. After trying knots with them, I realised that skill and resilience meant that knot tying was something that was not achievable proficiently this early on and I didn't want the first task something they would fail at. So they went on a treasure hunt while I put up the tarp, which I had planned on them doing. It was also raining heavily. I let any who wanted to be involved in setting up camp, but made it optional.
What went well and why?	The children really enjoyed a treasure hunt- they liked choosing who to work with, they liked that all instructions were not written. They enjoyed the open ended nature of the hunt (e.g.to find something that you know the name of, find something multicoloured). They were surprisingly interested in plant names (I didn't think they would be) and loved smelling wild garlic! They also simply enjoyed exploring, or in their words: "I liked getting muddy", "I liked smelling garlic". "I liked just being able to walk about outside."
What didn't go well and why?	It started to rain quite heavily and they loved being under the tarp. It wasn't tied brilliantly and so some rain pooled. The children loved pushing the rain pools up so it made a splash off the edge! However, I'd tie it tighter next time so we don't have water pools hanging over our heads!
What will you do differently for the next session as a result?	At the end of the session we looked around the site together to decide where to set up camp next week. They decided that a lower are would be better because the trees were good. Some of them have expressed an interset in tree climbing and 'making a zip line', so we agreed we would try to make a rope bridge. I think I will plan even less in terms of content but still have activities with an outcome for those that need the structure (the children with ASD are more comfortable with tasks).

Session 3

How did what happened compare to your plan?	At the end of the last session, the group had decided that they wanted to incorporate more climbing into the session, so we did this which wasn't originally planned. I had planned for them to make rope bridges later when they had knot skills. However, I showed them making a rope bridge and how to tension and 2 children had a go at making one themselves! The obstacle courses they designed by themselves.
What went well and why?	They loved digging! For children who are very 'cool' at school, who are in the latter stages of primary and therefore are concerned about others opinions of them, they showed no embarrassment about how much they liked digging! They really enjoyed remembering plant names from the previous session and were keen to use these in making an ID chart. It was clear that they felt like 'experts', which is less common for them in the classroom. They said they wanted to dig so they could add minibeasts to their ID chart, but actually they simply enjoyed the process of digging. One child who was squeamish about mud (with ASD and sensory issues) became fasicnated, stopped using a trowel and simply spent ages sticking his hands into the soil and laughing. They really enjoyed making an obstacle course using the rope bridge and creating their own games running up and down the paths. They were remarkably trusting of each other when blindfolded to be lead to a tree: they enjoyed trying to work out where the tree was from direction and then realising they were more successful when they relied on their senses only.
What didn't go well and why?	Leaving the school! The other adult support was delayed with other issues and the children with special needs forgot when and where to be so we wasted time searching the school for them! Some children love the structured actitivies, some prefer the free choice, but they are still learning what this actually means in practice. One child simply wanted to climb trees, but was climbing dead trees because he hadn't listened to which trees could be climbed.

What will you do differently for the next session as a result?	I have clarified with all the children where they should be and when at what time each week and they have agreed to remind one another. I will also remind them in assemblies and be clear which adult is responsible for getting the special needs children to the meeting point. At the sessions I will ensure there are a mixture of free/ open ended activities and more structured activities and that children are clear that they can drop in and out of these. For example, next week I will show everyone how they can make paints, but leave it to them if and how they want to paint. I will also bring clear physical markers to show which trees are OK to climb!

Session 4

How did what happened compare to your plan?	Due to Corona virus, my plans had to change as the number of children dropped and so the team games had to be adapted. We still did the craft activities, but only one of them as I think the other children would be sad about missing out. Otherwise, the plan was followed, including the elements the children wanted to incorporate form last week

What went well and why?	They now know some of the games and agree which they would like to start with: they loved Eagle eyes in a new setting and are getting more adventurous and wild in their hiding places. I set the activities more like a carousel and let the children choose if they wanted to make chalk paints, dig, explore new trees, etc. It is encouraging to see more of them starting to be able to choose something (before they found it hard not being told). Some are choosing according to interest, some according to what others are doing. They started by painting sticks they were using as guns, but once they had painted them they started using them as 'magic sticks' instead with no one telling them not to make guns! They were really creative with their ideas and some paint: one child expressed it as being 'better than art' (class based lesson) as nobody minded what his painting looked like! 2 children especially keen on tree climbing were working so well as a pair, encouraging one another, looking out for good footholds on trees, reminding each other of how to be safe, directing me how to make a rope bridge and then starting to make their own! This was amazing to see as one of these children has spent the week excluded because of poor behaviour: I have seen no such behaviour all session, rather him offering to help at every opportunity.
What didn't go well and why?	One of the children with ASD was not able to come and was visibly upset, as it was a change in his routine and he loves it. The group noticed the loss of 3 people who were self isolating and it made for a different dynamic. The children felt really unsettled that there wasn't going to be Forest School for a while. One child with extreme behaviour issues was brilliant at Forest School but couldn't cope with returning to school. The group seem to benefit from the regularity and being outside the school enormously.
What will you do differently for the next session as a result?	I need to ensure that the behaviours and progress seen in FS are fed back to class teachers and to work with the students as well, to see what is motivating them at FS so we can bring those positive attitudes into the classroom as well. When the next session happens is an unknown as my school is closing and so they children won't be in for the coming months. When we meet again we will have to reestablish trust, expectations and boundaries.

Sessions 5 and 6

These plans and reflections are from Autumn term 2020 with 12 new children, all taken from the school I teach at.This second group were chosen from 2 year groups by teaching staff because of specific needs and because they were already in a bubble together at school. The FS sessions rationale was to directly address some of those behaviours and needs: highly risk-averse; lacking self confidence and low self-esteem; poor physical stamina, agility and balance; low resilience and independence. The sessions tired to address some of these needs by showing children what they could do, what they were capable of and thus build physical stamina, self-confidence and resilience.

Lots of opportunities to explore independently around a new environment were planned in, simply allowing them to be somewhere unfamiliar and to start to feel safe there. Some of these children have never been anywhere wilder than an urban park, and even visit those rarely. One girl has always been too scared to touch a leaf. Most of them think of things in the forest as frightening, dirty and unknown, so plenty of opportunity was given to have fun, to learn, to take risks and to experience the wonder of being outside.

Session 5 (Session 1 of Autumn 2020)

How did what happened compare to your plan?	Having already run sessions, I was better able to plan a first session and this went largely according to plan. The children were really keen to carry on treasure hunting, so we spent a long time on this. They took the art activity in a different direction, but it was led by them and still produced some lovely natural debris portraits.
What went well and why?	Mostly the children were so excited to be outside, to be in the nature reserve and really engaged with all the activities. They loved the freedom of going to find things, of more open ended tasks that had no correct answer. They enjoyed the play element, that there was no pressure to complete tasks. They all loved the art, that you could move materials about and create lots of different pictures, taking photos of each one. They loved that after making them, they could dismantle them. There was a visible shedding of fear of the 'wild'. I introduced the rule that if they scream I think it is a serious first aid issue: this was largely because they were screaming at all the insects. Instead we decided to wave and say 'hello' instead. It was amazing that this worked so well, and one child spent most of the session stopping, waving and saying hello to the spiders (it was spider season!). She admitted that this was the first time she had not screamed and I overheard her at school advising another student who wasn't at forest school that this is what you do when you see a spider. Also, the sun shone and some very quiet people spoke!

What didn't go well and why?	Some children are really excited to be out of class and talking/ shouting out a lot. The majority of the group are very quiet (including a selective mute), so it is important I create space where I can hear the children as they interact with their peers, and not just opportunities to talk with the whole group. I need to allow some children a safe space to opt out of activities- this will be easier if we are in the lower area as I can then see them all even if they are not participating in the activities.
What will you do differently for the next session as a result?	In the reflection time, children had the chance to say which parts they liked and wanted to do more of and what they would like to try. As one of the focus of this group is building physical agility and balance, and because they wanted climb more, I will plan in more physical challenges (ropes and bank slides).

Session 6 (Session 2 of Autumn 2020)

How did what happened compare to your plan?	I planned to have a focus on balance and agility, but left it open ended as to climbing steep banks. I was planning on setting boundaries for how high up the banks children could climb, but we ended up discussing these as a group and it became part of their learning, to explore how high they felt comfortable climbing. These children have been selected as they are risk averse and struggle with physical challenges involving balance. It was actually really important for them to have metacognition about their learning of their own risk. As a group they kept assessing as individuals climbed higher how they felt, whether they thought it was safe and how they planned to get down.
What went well and why?	They embraced ropes and climbing in ways I hadn't expected. Having taught all of them PE, I was so surprised at children who often sit out or shy away from team games or more boisterous games, joining in with climbing, challenging themselves to take greater risk. One child who refused to ever touch a ball at school because they are dirty was happy to use trees and branches to climb up a bank. I could now extend this climbing into more complex obstacle courses, which I didn't think they would be able to manage in my initial planning.

What didn't go well and why?	One child is still reluctant to work with others who are not in her class. She becomes sullen and withdrawn if she doesn't get to be with who she wants (even if they don't want to work with her). This will be a long term process of her realising other people are also OK to work with. There was already a glimmer of this between the beginning and end of the session.
What will you do differently for the next session as a result?	Increase the physical challenge! I think they are ready for some obstacle courses and hammocks. I will also make sure there are opportunities to work in a fun way with people they don't normally work with.

See also: appendix 8 Staff evaluation forms

LEVEL 3 PORTFOLIO TEMPLATE
UNIT 2 - FOREST SCHOOL PROGRAMME LEARNING & DEVELOPMENT

Q1. Summarise how the Forest School principles apply to your own setting

Describe the Forest School principles for good practice, as agreed by the UK Forest School community. To answer this question, you should consult the Forest School Association's website, which lists the principles.

The Forest School principles are as follows (taken from the Forest School Association Website https://www.forestschoolassociation.org/what-is-forest-school/ accessed on 19.02.20)

- FS is a long-term process of regular sessions, rather than a one-off or infrequent visits; the cycle of planning, observation, adaptation and review links each session.
- FS takes place in a woodland or natural environment to support the development of a relationship between the learner and the natural world.
- FS uses a range of learner-centred processes to create a community for being, development and learning.
- FS aims to promote the holistic development of all those involved, fostering resilient, confident, independent and creative learners.
- FS offers learners the opportunity to take supported risks appropriate to the environment and to themselves.
- FS is run by qualified Forest School practitioners who continuously maintain and develop their professional practice.

Describe the challenges of implementing the principles in your setting, with your proposed approach to overcoming them. To answer this question, you can draw on your experience during your 6 Forest School sessions.

The children are all educated at one school, which has its own behaviour management systems and expectations of the children. It took some time for individuals in the group to know that behavioural expectations at FS sessions were slightly different. As older KS2 children, the element they found the most challenging was that it was learner-led as they are used to being given instructions and tasks for each lesson by a teacher. At first, they didn't know what they wanted to do (partly because they didn't know what the possibilities were). Once I had established some regular games and introduced some ideas, they were able to take these, develop them and then start suggesting their own thoughts on activities. These started to become more realistic once they appreciated that they were responsible for making it happen: for example, one child asked at the beginning to make a zip wire, which over the weeks he realised wasn't possible and simply started asking for ropes to make his own rope bridges and obstacle courses.

Taking appropriate risks is something that many of the group struggled with before FS sessions, where their behaviour in class often didn't demonstrate consequential thinking. The group were split initially into those who took inappropriate risk (mainly physical) to being quite risk averse. In time, both sets of children responded well to calm and factual conversations about their actions with them taking ownership of what might happen and thinking through the risk involved. An example of this was with one child: I saw him high in a tree (that we had not agreed he could climb) and simply stated "You are up high in that tree." He insisted it was safe as the tree was big. I asked him whether he thought the tree was alive or dead. He looked around and said he thought he saw buds. He looked again, decided maybe they weren't buds and started to come down. When he was at the bottom we looked for signs of life and he said he wasn't sure if the tree was dead or alive. I asked what could happen if the branches were dead and he demonstrated using twigs how a branch could snap. He decided that it wasn't a good tree to climb and asked for help finding a good tree to make a rope bridge from. At school, he is prone to angry and violent outbursts (usually when being told what to do) but here he was reflective, calm, thoughtful and demonstrated that he was learning how to better manage risks.

All of the participants responded well to the more holistic approach to learning and enjoyed the physical freedom and the more hands on approach. All of them suffer from low self esteem and self confidence and it was tricky at first learning new skills such as knot tying. Many didn't have great resilience and became frustrated and gave up easily. However, when tasks were small, manageable and achievable they responded well to being able to do something and became each others champions, reminding each other about things that they had achieved when the task in hand was challenging.

The main logistical challenge of implementing these particular FS sessions was the long term element due to the lockdown for COVID-19 which occurred after four of my six sessions. The children had really found their stride and the momentum of the sessions was great before the lockdown.

Q2. Give 2 examples of how Forest School encourages the physical development and well-being of participants

To answer this question, you can draw on your experience during your 6 Forest School sessions. If you use research to make your argument, remember to quote the source.

Forest School encourages physical development in a number of ways. Firstly, the majority of time at Forest School is spent standing or moving, opposed to a classroom where the majority of time is spent sitting. Research by Austin, Knowles and Sayers found that light to moderate activity amongst Forest School primary aged children is significantly higher than a traditional school setting, even when PE is factored in. Their studies across 4 schools also found that vigorous activity was higher amongst Forest School children.
"These objective findings demonstrate Forest School sessions to be extremely beneficial in terms of increasing children's physical activity levels and decreasing sedentary behaviour. Children spent significantly more time taking part in light intensity physical activity on Forest School days than regular school days."
Austin, C., Knowles, Z. and Sayers, J. F: Investigating the effectiveness of Forest School sessions on children's physical activity levels.

Forest School team games and activities often involve aerobic activity such as wide/ hide and seek/ catch type games. Other games build agility and balance, such as obstacle courses, balance games, rope bridges/ tree ladders. Tree climbing and other climbing activities build core strength, hand eye coordination, agility and dexterity.

During my Forest school sessions, I saw progress in both the children's fine and gross motor skills: knots, painting, rope lashing, etc proved to be more challenging at the beginning of the sessions, but after a number of weeks, they were becoming more dexterous (and patient!) so their fingers could manipulate rope more easily (but not perfectly!). I feel that given more time the knot skills would have improved, but they were never totally confident to tie anything independently. There was clear balance and core strength development especially amongst the more sedentary in the group, which could be seen through a rapid improvement in their tree climbing, rope climbing and obstacle course skills. It was possible to measure how far they could climb up the same tree each week (they measured this themselves using branches and tree marks as markers). Their balance improved gradually over time, seen in the speed and accuracy with which they could complete an obstacle course involving log-balance, stepping stones, etc. Alongside this, the children developed their abilities to assess and manage physical risk and gained a better understanding of their own physical capabilities.

Q3. Give 2 examples of how Forest School supports the emotional and social development and well-being of participants

Regular and significant periods of time spent in wild nature supports development of social and emotional wellbeing and equips children to mange negative events and failure in a positive way. In setting children challenging but achievable activities, they often feel a sense of fulfilment and completion ,which in turn encourages them to challenge themselves further. Research by McCree, Cutting and Sherwin notes how: "… social free play outdoors and relationships with a particular place can establish emotional resilience and self-regulation."

Through play, games and team work, social skills are developed as children have to interact in order to solve problems, manage resources, and achieve goals. Maslow's hierarchy of needs shows that when basic needs of children are met, then this provides a basis on which to build better relationships, improve self esteem and thus allow room for self-actualisation. As much of Forest school is learner led, children's self esteem can be developed as they take increasing ownerships and control of sessions and what they do with their time. This is also an important aspect of developing their motivation: if in a classroom they often perceive themselves to not be 'achieving' or meeting targets, they can often become de-motivated: however, with regular, achievable tasks (painting, creating ID charts, treasure hunts, being an essential part of a team), they can quickly develop their understanding of their skills, which are far broader than in a classroom. Children can become more self-aware when they given the space to understand their strengths and weaknesses and this is reinforced when plenty of time is given for reflection as it is in forest School.

Empathy and trust are built over regular session, where children learn how they can rely on others and also themselves feel a valued part of a team. The importance of regular and long term sessions is highlighted in Gardom's research, who notes "As time progressed in continuous provision, subtle changes were noticed in various children, from a calming effect, to increased confidence and seeking out others." Relationships with adults also develop over time and can be more positive than in a mainstream classroom setting, as there are fewer boundaries and different expectations, particularly of how they should manage their bodies (fidgeting and big movement is less of an issue outside!). Children can learn self regulation and self control more easily in Forest School settings as there is greater emphasis placed on consequential thinking and working out the implications of actions.

Research accessed 2/10/20

- Maslow: https://www.simplypsychology.org/maslow.html
- McCree, Cutting and Sherwin https://www.tandfonline.com/doi/full/10.1080/03004430.2018.1446430
- Gardom, R: https://www.don.ac.uk/wp-content/uploads/2018/10/how-effective-is-forest-school-programme-promoting-pro-social-skills-rhianna-gardom.pdf

Q4. Give 2 examples of how Forest School supports the intellectual development of participants

To answer this question, you can draw on your experience during your 6 Forest School sessions. If you use research to make your argument, remember to quote the source.

Piaget and Bruner's studies into learning concluded that for children to learn effectively, they must first experience something meaningful. That children learn through play is well researched and underpins the pedagogy of the Early years curriculum in both the UK and abroad. Forest School draws on this child-led pay-based learning to allow children to have meaningful, tangible experiences that encourage them in discovery based learning. In my Forest School sessions I was working with children that I had previously taught in a classroom setting (I had a mixed year group, including 3 year groups I had taught). I know how these children engaged with and learnt in class and the motivation in Forest School was much higher. For example, I had taught a science unit on plants and classification and the engagement in abstract theories was minimal. When I used plants in class the interest was increased, but it was far surpassed when learning to identify and classify plants that were growing. When the children saw a purpose for their learning i.e. identifying plants because they posed a danger or because of their uses, they engaged immediately and remembered facts readily. They were able to apply this knowledge, e.g. looking at the hairs on a nettle plant and knowing their purpose, they were able to find other plants such as alkanets that had similar properties.

The imaginary play that is a key part of school can also help with children's story telling and writing skills. In her research, J. K Coates in *Learning while playing: Children's Forest School experiences in the UK* notes how the Forest School input translates into class learning: "The creation of new worlds seemed to have different functions for the two groups. For the younger children, creating objects consolidated the story-based learning they did at school by providing a relatable setting to enact known stories (e.g. *Stickman* by Julia Donaldson). The older children, on the other hand, discussed how being in the forest might help them when doing creative writing at school, providing them with new material and ideas."

Q5. Summarise the key characteristics of play and its role at Forest School, giving 3 examples of how you integrate play and choice into your Forest School sessions

The UN Convention on the Rights of the Child explicitly states that "…childhood is separate from adulthood, and lasts until 18; it is a special, protected time, in which children must be allowed to grow, learn, play, develop and flourish with dignity." A key element of this treaty is play, of which there are a huge range types, often overlapping and occurring concurrently. The principles of play can be physical, such as locomotor, rough and tumble, exploratory, mastery and symbolic play where children use their bodies and objects to explore, interact with and manipulate the world around them.These kinds of physical play may involve both gross and fine motor but the key principle is that the body and physical objects are used to explore, frame and understand the world. In my initial sessions I realised how important this kind of play was to the majority of my group: they used phrases like "Finally- freedom!' And "I just want to run about." I allowed lots of time and space for physical exploration and challenge and consequently found their attention in more focussed tasks was much better.

Play England's charter states that: "Through playing, children are creating their own culture, developing their abilities, exploring their creativity and learning about themselves, other people and the world around them." This key principle of play is creativity and imagination, where transformations are made and conventions tested: this kind of play may be expressed in art, music, craft, storytelling and allows children to express their emotions, ideas and understanding in experimental and innovative ways. Role play, drama, fantasy and recapitulative play allow for children to explore social connections, emotions and interactions in a safe space of 'make believe': it provides a bridge between concrete and abstract as well as real and imaginary events. Similarly, I found that my group of (normally self-conscious) older KS2 boys initiating imaginary play, which expanded in time: it moved from being gun/ stick based, into tea parties with royalty! This required time and trust, though and they only started to be more imaginative when they felt that their experiences wouldn't be shared at school as they openly acknowledge that peers would mock them for this kind of role play.

Risk embracing play such as deep play allows for interaction with new and tricky situations in the safe space of play and is key in the Forest School setting.
These categories are taken from Bob Hughe, 1996, in "Making sense of play" by Perry Else, but are also widely documented especially in EYFS play literature. In my sessions, the team dynamic became really important as the children encouraged and guided each other through new, daunting and challenging situations-the risk averse and the gung-ho advising each other to good effect!

Play England Charter: http://www.playengland.net/wp-content/uploads/2015/09/charter-for-childrens-play.pdf
UN Rights of the Child: https://www.unicef.org/child-rights-convention/what-is-the-convention

Describe how the principles of play – and risky play – translate into play policy.

Risky play is an essential part of play as it challenges learners to deal with situations they find uncomfortable, new or scary and learn how to overcome their fears and manage within that new situation. Physical risk in Forest school, such as rolling down hills, tree climbing, balancing on rope bridges helps children to understand what their bodies are capable of and practice co-ordination and dexterity. Interacting with dangerous activities such as fire lighting can lead to a real sense of achievement: if they can feel scared and still participate the satisfaction is intensified as a hurdle has been overcome. There is an important balance to strike, because if a child is too fearful they are less likely to be able to enjoy or learn from an activity. In this case, games such as hide and seek, which have lower levels of risk, are a good place for children to learn that there can be benefits in risky play.

Give 3 examples of how you integrate play into your Forest School sessions.

Given that play is often child-led, I have been keen for children in sessions to suggest ideas of what they want to do and to leave plenty of time for them to explore through play. In each session we have a time of thinking about what they would like to do more of or other ideas and think about how we could make it happen and what equipment might be required. For example, after one session where we used digging to find mini-beasts, some children wanted to dig again in the next sessions. They enjoyed simply playing in and with the soil: feeling, tunnelling, building. As the children are upper key stage 2, they really love the team games we play. Each week they would ask for more games, or old favourites and especially liked ones where there was an element of team challenge (playing against each other), like magic stick lifting. If some basic equipment was provided, e.g. ropes, the children were very good at creating their own games using them. They liked to challenge one another with physical activities, like completing an obstacle course, or getting points for crossing a rope bridge in a particular time. It took a few sessions, but the children started to use natural objects (sticks, snail shells) in imaginary play. There was an element at first of dismissing this imaginary play (the group was 8-11 year old boys who place much emphasis on others perceptions of them) as something for younger children. But as soon as an older child had taken a stick, painted it with chalk paint and started using it for magic, the others soon followed, along with potions and snail shells with special powers… They all wanted to play, I just needed to be observing and facilitating so they could do this freely and safely.

Q6. Summarise the recognised theories of learning and development relating to a Forest School Programme

Csikszentmihalyi's Flow theory seeks to address how we can fully strengthen and achieve a positive sense of ourselves and be 'truly happy'. 'Flow' in this sense is the sweet spot where just the right level of challenge and skill are found in a task so that we a completely fulfilled by it. If there is not enough, or too much, emphasis on either challenge or skill in a task we may become bored, worried or anxious. In order to achieve this 'flow' the task needs to have clear goals and be achievable. The setting must allow for concentration and where the learner can be fully absorbed and free from worry (to get lost in the task) and any feedback needs to be immediate.

Howard Gardner theorises that all humans have multiple intelligences, not just linguistic and mathematic, as is the focus of most mainstream education. These intelligences range from musical, to natural, from visual to inter and intra personal. Most mainstream education focuses on rewarding those who demonstrate word and mathematical intelligences, but Gardner suggests that recognising that we may have multiple intelligences and that there is no hierarchy amongst them- no one intelligence makes a person more intelligent.

The common thread of these theories is that individualisation is key for educators: leaners have different ways of learning, skills and levels of challenge. This would suggest that a pluralisation of teaching (teaching the same thing in different ways) would mean that there would be greater ease of access to the learning and a higher sense of achievement in tasks undertaken. When looking at flora and fauna identification in my FS sessions, these approaches helped engage the children- the physical, dynamic aspect of seeing plants in animals made the process come alive for them by being a full sensory experience (smell and touch being particularly important). They were building on some prior knowledge, but there was enough challenge for them to want to fulfil the task. The choice of how they made their own ID chart meant it was a low threshold and everyone could contribute, but allowed freedom for those that were able to challenge themselves with deeper learning, or making greater connections.

Forest School provides a forum where multiple intelligences are both welcome and encouraged: it is a great leveller. Pens, pencils, writing and more formal learning are left in the classroom, and all start on an equal footing in the Forest School setting. When learner are encouraged to engross themselves in the small, achievable tasks common in Forest School, they are able to develop both skills and a sense of achievement.

Q7. Summarise the key influences that affect participant behaviour at Forest School

Describe the factors both in Forest School and in the lives of participants that can affect their behaviour at Forest School (social, biological, environmental, etc.)

There are a huge range of factors influencing behaviour, which can be broken down into these areas and include:
Internal and biological factors, e.g: physical needs like hunger and tiredness; neurological issues like learning needs and developmental delays; physical and speech and language difficulties or disabilities; illness (chronic or immediate) and general disposition.
External factors, e.g: home environment including history of abuse or neglect; family history including bereavement or separation; school environment; interactions with institutions; cultural expectations and norms.
Immediate environmental factors e.g: temperature and weather; comfort and appropriateness of PPE; expectations and rules and understanding of these; peer relationships and interactions; whatever has immediately preceded.

Explain how these behaviours then impact on the learning and development of participants at Forest School.

Basic physiological needs influence all human behaviours and so at the most fundamental level, if someone is tired, hungry, too hot or cold or feeling unwell, their behaviours will be affected by this: they may lack focus, be agitated or lethargic. These factors can be fairly easily mitigated.

FS practitioners need to be mindful of immediate environmental factors such as the weather and how these may impact behaviour. Additionally, who is in the group, both children and adults, the dynamics and the rules and expectations will influence behaviour. These factors can be addressed but are less straightforward as they may fluctuate more often and thus FS leaders need to be dynamic and flexible in their approach.

Chronic issues such as physical disabilities and learning needs will continually affect behaviour and these need to be accounted for in careful planning alongside other caregivers who know each individual's needs and coping mechanisms.

Deep-seated social and emotional issues will affect participants behaviour but perhaps in ways even they are not aware of: being mindful that there will be events and trauma in many children's lives is important as each individual will respond to learning in a new FS environment differently.

Explain how an effective approach to behaviour considers how needs (met and unmet) impact on behaviours.

A FS practitioner needs to be mindful of all the influencing factors on behaviour, but only has influence over some of them and it is helpful to start with these. Maslow's hierarchy of needs states that physiological needs must be met before social and emotional ones. In practice, FS practitioners should ensure participants are appropriately dressed before starting, that they will be able to maintain a stable temperature considering the weather and that there is food and drink available for them. Children's safety and sense of belonging is paramount, and ensuring participants feel safe, secure and know the rules and expectations of everyone will help to manage behaviours stemming from insecurity.

Once these needs have been met, FS leaders need to consider what other factors may be influencing behaviours.For example, if self esteem, resilience and self confidence are low, activities should be small and achievable to foster a sense of completion and pride. If interaction with peers or lack of respect are behavioural issues, then team games/ partner work/ shared ownership tasks can be introduced. If lack of focus or apathy are issues, then children can be encouraged towards play-based or self-led learning where they take responsibility for what they are doing.

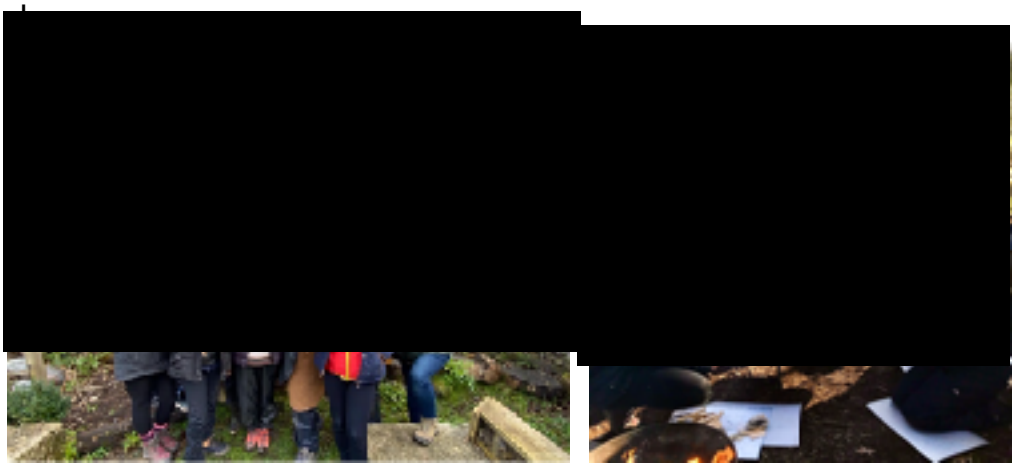
Once these factors have been considered the FS practitioners can consider what longer-term underlying factors may be hampering growth in areas such as problem-solving and creativity.

Behaviour management in FS needs to consider all the needs, but should seek address them from the physiological and safety point first before addressing the issues of belonging, esteem and self-actualisation.

Q8. Describe the ways in which a learning community has developed during your Forest School journey

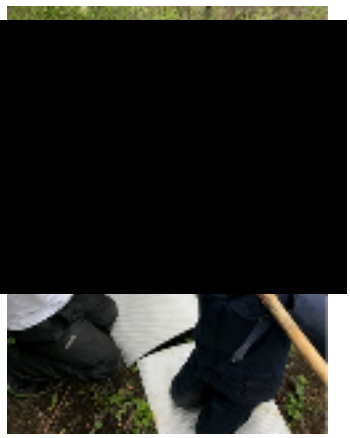
During your training

During our training real sense of camaraderie was built over the week: we all arrived with different expectations, experiences and values and yet, through the Forest school experience a sense of common purpose was built. Some people came from the same organisations, but a sense of willingness to get to know one another, share experiences and help one another was engendered through activities that called for different skills and strengths. Trust was built through activities like blindfold meeting a tree and building rope bridges; teamwork developed through erecting shelters, lighting Kelly kettles and making treasure maps and a feeling of community grew through learning, sharing and eating together. A subsequent WhatsApp group has proved a mine of information and support, with resources and Forest Schools settings being shared. This experiences was mirrored, to some extent, during Forest School First aid training, where experiences and knowledge shared.
Using a site off school premises, which is managed by the local council, has meant that I have built rapport and relationships with a number of other local Forest School practitioners (both independent and schools based). This is helpful especially as we communicate about use and management of the site and can



During your 6 Forest School sessions

The learning community amongst the FS participants built gradually over the sessions as the children were from different classes across the whole of Key stage 2. The children knew each other's names but some had spent very little time with each other, especially the children with ASD, who spend much of their time outside the classrooms with 1-2-1 adult support. Team games played an important part of this development, where they enjoyed both the elements of competition and collaboration to solve a problem. The 'magic stick' team game was a brilliant way to help them find different ways of communicating as we started by trying to raise and lower the stick without any talking! Trust was also built through blindfold tasks (like meeting a tree, or being camera eyes), where they had to rely on someone they may not know that well. It didn't take long for them to find common interests in climbing and testing and relying on each others knots in rope-based activities helped cement friendships. I was surprised at how much they were willing to display care and concern for each other, given that at school they have difficulty forming and maintaining relationships. They were always diligent in making sure a partner was safe in tree climbing and they were especially helpful and considerate to the different needs to children with ASD. I also have a different relationship with the children: having taught most of them in previous years as a class teacher, I find they have a different attitude towards me now in school having been at FS together: they are always keen to ask how FS is going and can talk to me reasonably and calmly if they have been in trouble at school.



My own learning community: having other people going through the same experiences, to share ideas with has been really helpful and helped to maintain the importance of a calm and stable approach.
As I have been establishing FS on my own in my school, the broader network has been invaluable in a practical sense for lesson ideas, accessing resources and how to function (or not) during the Covid lockdown.
In turn, I have been able to help other people on their learning journey, encouraging and teaching other adults (TAs and adult volunteers) about Forest School and some of the skills required to help out.

Q9. Summarise your own personal development & learning journey through the Forest School training process

As far as possible, I felt it was very important to put my teacher persona to one side. This was in some ways difficult as I have taught a significant number of the group as a teacher and there is already that student/ teacher dynamic in our relationship.

I ran a pre-session indoors to outline some of the aims and expectations and to build a sense of trust amongst the group. In the first session we did a small knot-tying exercise and almost all of them crumpled into their usual behaviours of anger/ distancing/ becoming unfocussed when they couldn't tie a knot the first time. It was at that point I was reminded how little resilience they had and of the importance of FS happening over a long period of time. Their behaviour can be very challenging and I did think "What have I done?". As we spent more time outside, though, I came to see how important my consistency of approach is over time because many other things in these children's lives are not consistent. I found increasingly I was drawing on my knowledge and experience of working in International Development more than I was on teaching experiences. Having worked with groups of socially excluded, vulnerable and chaotic adults for many years in different contexts, I found drawing on the processes that I had used with them very helpful. For example, as a teacher, the role can often become focussed on behaviour management, but in FS sessions I found the facilitator approach more helpful in letting children increasingly take responsibility for their own behaviour management.

As a lifelong keen gardener, I feel I have a good knowledge of plants, but less so of trees.During the Covid lockdown I spent time daily learning tree identification using a mixture of books, apps, my own and others knowledge. With my own children, we participated in labelling local trees (only ones we were sure of) on the pavement with chalks (and the local council endorsement), which was positively received by the local community who enjoyed knowing what was about them. I also had plenty of time to practice various craft and other FS activities (e.g. catapult making, starting fire with magnifying glasses, fire making/ cooking, making bird feeders, hapazome, rain painting, etc) with my own children and get their input and feedback.

Going forward, I would like to develop skills in 'wild cooking' I can do whilst I am using a site that does not allow fires. I feel that fires are an important part of Forest School, but I am limited by London council regulations. The children have enjoyed small amount of eating and using natural materials we have done (eating wild garlic, blackberries etc and making conker soap) and I would like to expand knowledge of how to use these ingredients without fire. I would also like to learn more about fungi as the site I use is damp and has a number of different fungi during different seasons.

As I am based in a school, I would also like to integrate FS more into every day life there. Currently I am the only FS practitioner and use TAs and parent volunteers. I would like to include more teachers in coming to FS, so that it can be incorporated into whole school curriculum delivery and become an underlying ethos to the whole-school approach to outdoor learning.

LEVEL 3 PORTFOLIO TEMPLATE
UNIT 3 - FOREST SCHOOL PROGRAMME PLANNING & PREPARATION

Q1. Describe the history of Forest School, summarising the key influences that have informed the current principles

Forest School has always been with us: humans have evolved over centuries in the context of surviving in the wild, outside. It is only relatively recently in evolutionary terms that we have found ourselves learning in a classroom context. Since the 1800s and the Industrial revolution, the dichotomy of natural world and rational thinking have been bought more starkly into contrast. Educational philosophies, such as those of Steiner and Froebel put nature in the centre and the Scouting movement carried on this thinking into the 1900s. Outdoor play became focal throughout the 1900s with pioneers such as McMillan and Montessori putting the environment at the centre of learning. Experiential , child-led learning continued tho thrive during the latter half of the 20th century with movements such as Woodcraft folk, Outward Bound and the Swedish influence of 'Friluftsliv' also emphasising the importance of spiritual connections with the outdoors. During the 1990s the Scandinavian influence remained strong and Danish early years outdoor learning helped form the basis of the Forest school movement during this time and has shaped much of how Forest schools work today. Concurrently, at this time in the UK, mainstream education more outcome driven with the implementation of the National Curriculum and Forest School grew as part of an 'alternative' approach.
From the 1990s onwards Forest School practitioners worked with other stakeholders to create a common set of features and principles. In July 2012 The Forest School Association (UK) was formally launched with 6 underpinning principles, summarised by the FSA as:
Learners are all:
- *equal, unique and valuable*
- *competent to explore & discover*
- *entitled to experience appropriate risk and challenge*
- *entitled to choose, and to initiate and drive their own learning and development*
- *entitled to experience regular success*
- *entitled to develop positive relationships with themselves and other people*
- *entitled to develop a strong, positive relationship with their natural world* *

These principles continue to guide Forest School practitioners today.
* Taken from:https://www.forestschoolassociation.org/what-is-forest-school/

Q2. Identify and list a few local Forest School practitioners and networks that you could rely on for support (The FSA website is helpful for this)

- My site is based in Brookmill Nature Reserve, which is owned by Lewisham Council and mantained by Lewisham Enrinomental Education. The links with the team there have proved invaluable in my outdoor learning sessions I have run there so far and they will no doubt continue to be a source of support.
- I belong to a forest school social network site (on Facebook) that provides support and advice amongst practicioners.
- I meet on an ad-hoc basis with other teachers in my position: those that work within mainstream schools and deliver Forest Schools to children at their schools: this is helpful as there are demands specifically made on us as both teachers who have to deliver a defined curriculum and Forest School practicioners.
- My fellow Forest School training colleagues have proved a helpful and friendly source of support and good instant sounding board via messaging.

Q3. Evaluate one piece of research on Forest School practice

To answer this question, you need to find one short piece of Forest School research (just typing "Forest School Research" into Google will bring up many articles).

You then need to evaluate it against your own opinions and experience of Forest School. Some of the questions you may want to consider include: do you agree with the research? What do you think of the methodology chosen? What are the outcomes for participants?

The research being evaluated is: *Investigating the effectiveness of Forest School sessions on children's physical activity levels* Clare Austin, Dr Zoe Knowles and Jo Sayers December 2013, accessed at https://www.merseyforest.org.uk/files/documents/1341/Austin,%20C.,%20Knowles,%20Z.%20and%20Sayers,%20J.%20Forest%20School%20Evaluation.pdf

This research aimed to ascertain whether children were more active during Forest School days compared with school days and to what extent. Much forest school research has focussed on a small number of children or case studies, where as this research could be seen as more robust in that 59 children were used over 4 schools over a 12 week period. Data was collected in a number of ways, including a standardised scoring system and from accelerometers worn by children. Quantitative analysis from this data was added to with qualitative analysis from writing and drawing activities and focus groups. Therefore, it can be said that findings in this research go beyond the anecdotal and show a clear picture of the impact of Forest Schools on activity levels in children.

Data from the accelerometers was managed by sports scientists with expertise in using them to measure activity levels, with clear standardised markers for what sedentary, light activity and intense activity meant. From the data collected, the study was able to conclude that children were less sedentary, more lightly and more vigorously active on Forest School days compared to PE and non PE days at school. Perhaps because they didn't know the cause, the researchers failed to adequately address the issue of why children had nearly the same levels of moderate and vigourous activity at the weekend as on Forest School days. Whilst it was comparing Forest School to classroom based school, it would be interesting to analyse the data further because it would suggest that children are just as active at weekends as they are at Forest School.

During the focus groups, researchers tried to unpack whether Forest School had a positive impact on mental health. They did this by asking about children's likes and dislikes of Forest School. Whilst this shed light on how children enjoyed being active (and thus were more likely to be active), the information was obtained in single sex focus groups and many of the answers repeated because of the tendency of younger children to repeat what a peer has just said.

Overall, this research did demonstrate, through rigorous methodologies, that Forest Schools have positive impact on children's level of activity. One major finding is that no child was sedentary during forest school and that a significant number were more active (light, moderate and vigorous) than on the other days they were at school. That this was reported across 4 different schools, goes a long way to proving that the physical benefits of Forest School are not to be overlooked and that perhaps it should be given the same credibility as PE is in the national curriculum, given that it has manifold other benefits.

Q4. Write an ecological impact assessment of running a Forest School programme on your own site

To answer this question, you need to fill in the Ecological Impact Assessment template provided (see details below). The template includes the following information:

1. *History of the site*
2. *Key stakeholders*
3. *Ecological survey (flora, fauna, abiotic elements, etc.)*
4. *Type and level of impact expected from Forest School*
5. *Key mitigations put in place against the above.*

See Appendix 4: Ecological Impact Assessment of Brookmill Nature Reserve.

Q5. Use the ecological impact assessment to create a 3-year management plan for the sustainable use of your own Forest School site and to enhance biodiversity

To answer this question, you need to fill in the 3-year Management Plan template provided (see details below). The template includes the following information:

1. *Your vision for the site*
2. *Your plans to enhance biodiversity*
3. *Your anticipated use of the site*
4. *Your approach to mitigating impact*
5. *How you will involve your client group with the management processes*
6. *Your evidence of ongoing monitoring*
7. *Your approach to biosecurity*

See Appendix 5: Management plan for Brookmill Nature reserve

Q6. Create your own Forest School Handbook

1. Write your own FS Handbook, which should include the following documents (with reference to appropriate legislation):
   - Table of contents
   - Declaration of review date
   - Declaration the Handbook has been read by all supporting adults with a regular role
   - Vision statement for own Forest School reflecting the FS Ethos and Principles

- Policies and procedures:
  - Behaviour Management Policy
  - Environmental Policy
    - Environmental Impact Assessment (template provided in handout)
    - Landowner's Agreement
    - Woodland Management (template provided in handout)
  - Equality and Diversity Policy
    - Including Prevent if appropriate
  - Health & Safety Policy
    - Accident & Emergency
    - Cooking and Food Hygiene
    - Extreme Weather
    - Fire use
    - First Aid
    - Insurance
    - Tool use and maintenance, including ropes
    - Risk Benefit Analysis & Management (template provided in handout)
    - Risk Assessment (example provided in handout)
    - Transport
    - Welfare incl. clothing, PPE, toileting, food & drink
  - Safeguarding Policy
  - Anti-bullying Policy
  - Confidentiality Policy
  - Child/vulnerable adults protection Policy
  - Data Protection and handling/ ICO Policy
  - DBS Policy
  - Disclosure/accusation Policy
  - Lost or missing child Policy
  - Social Media Policy
  - Staff, ratios, roles and responsibilities Policy
  - Visitor Protocol Policy

See separate document: Forest School Handbook for St. Stephen's C of E primary school.

Q7. Explain the role of the Forest School programme leader

Describe the role of the Forest School Leader, making sure that you refer to the Forest Schools Ethos and Principles.

A FS leader is an educator in the broader sense, but takes the approach more of a facilitator rather than a teacher. A FS leader will seek to promote the bond between learners and the natural environment through long-term exposure and through providing a setting which fosters a sense of exploration of the natural world. The FS leader will need a certain amount of knowledge (e.g. of the flora and fauna) and skills (e.g. fire management, tool handling) in order to guide participants in their understanding of the woodland around them. Keeping the participants safe and well is paramount, therefore a FS leader needs knowledge and training in first aid, safe tool use, fires safety, shelter building, food hygiene and other health and safety requirements. As FS encourages appropriate risk taking (e.g. tree climbing) as a way of building physical stamina, self-confidence and problem solving, a FS leader needs to understand the needs and behaviours of the learners. Over time, as the FS observes and interacts with the participants, they can adapt planning and activities tailored to individual needs, therefore they need to be flexible in their approach. There is a still a need for careful planning and resourcing for sessions, especially to have the bigger picture in mind over a series of weeks or month. However, this planning will need to be constantly reviewed by the FS leader in response to the participants interests, motivations and needs. The FS leader should be seeking to continually develop their skills and knowledge and ensuring that this feeds into their practice.

Q8. Explain the rationale for your own Forest School programme

Describe the rationale and learning objectives for your own Forest School programme. You should link your description to your participants' learning and development needs

Over 2 years I have been delivering FS- type sessions at school where I am a class teacher (offsite at a Nature reserve) and the positive impact of these whole-class groups has been documented and recognised by the school. As well as acknowledging the favourable impact in the year groups where these session happened, other staff also saw a gap for other specific groups of children across the school as a whole. The rationale for my own FS programme was created in conjunction with other teachers and school leaders, stemming from a perceived need for alternative learning environments for a number of children with certain needs. We wanted to specifically start with those children who consistently struggle to manage their behaviour in class and are increasingly spending time excluded from classes, both to find a positive alternative for them and to allow the teacher and rest of the class some time to focus on their work. Whilst noting that FS can be a positive experience for all, other groups were also identified who would benefit from this experience, e.g: those with ASD and ADHD, those with specific learning needs, the disengaged and those with behavioural issues. Thus rationale was:

- To provide a space that these children could own their learning.
- To give opportunities to excel through a series of small, manageable and achievable tasks.
- To provide increased opportunities to explore, take risks and develop physical stamina outside.
- To encourage team-work, paired work and problem solving skills by working in smaller groups.
- To build self-confidence and self esteem through children having an area where they could become experts.
- To begin to develop an interest in the natural world and improve learning in this area.

LEVEL 3 PORTFOLIO TEMPLATE
UNIT 4 - FOREST SCHOOL PROGRAMME: PRACTICAL SKILLS

Q1. Describe the appropriate personal protective equipment (PPE) and clothing needed for a range of Forest School activities

Describe the clothing and PPE that participants in Forest School should wear in each season, highlighting differences.

Spring	Clothing should be long sleeve and trousers long to protect against sun, insect and plant stings, scratches, etc. Waterproof trousers and coat (lightweight) are important in this rainy season. Wellies will keep feet dry, but extra socks should be worn on colder days. Hats and gloves are a good way to keep warm on colder spring days and can be taken off easily as it warms up. Tool gloves should be used in ALL seasons when handling tools (e.g. gloves for whittling or using a bow saw).
Summer	Even though it is hot, clothing should be long sleeve and trousers long to protect against sun, insect and plant stings, scratches. These should be lightweight cotton. A sun hat will protect faces and necks from sunburn. Footwear should be closed-toe (no sandals/ flip flops)- a pair of trainers are best for activities such as tree climing. Having waterproofs handy will mean participants can still enjoy being outside in wet summer days.
Autumn	As it gets colder, more layers should be available to ensure children don't get cold. Waterproof trousers keep legs warm and a waterproof warm coat is essential. Walking boots help keep feet warm and dry (wellies can be worn with extra socks if it is getting colder).
Winter	Warmth is key: lots of layers! A warm, waterproof coat and trousers are essential, as well as hat and gloves and tucked in scarf. Walking boots help keep feet warm and dry (wellies can be worn with extra socks).

Describe the clothing and PPE that participants in Forest School should wear for different activities

Whittling wood	Cut resistant gloves, made with metal, provide protection against cuts whilst still allowing a degree of dexterity in handling objects. These are worn on the helping hand while a bare hand holds the knife handle.

Making a fire	Fire gloves should be worn on both hands when handling objects in or near the fire that have become hot e.g. Dutch oven pans, food coming in or out of the fire, etc. Kelly kettle handles should be used with bare hands for better grip.
Foraging for natural materials	Gardening gloves can be worn if working in an area that is dense with e.g. bramble, nettles or thorns. Thick gloves will be needed if working with very thorny plants such as hawthorn or pyracantha.

Q2. Describe the basic tool maintenance for 2 tools and 1 rope

To answer the question, you need to take into consideration the following:

1. *Checking tool/ rope condition prior to use*
2. *Cleaning tool / rope*
3. *Sharpening blades*
4. *Changing blades*
5. *Storing tool / rope safely*
6. *Identifying when tools need to be taken out of circulation*
7. *Filling in a tool maintenance log*

Tool name	Maintenance process
Sheath knife	Knives should be kept clean, dry and oiled and stored in their sheaths along with similar tools. If knives have wooden handles and are splintery, the handles should be sanded. Knives should be regularly sharpened with a whetstone in a workshop (not on site) and regularly checked for sharpness and nicks in the blade. Sharpness should be tested by sighting along the blade, not by touch. If a knife blade has become bent, and a bevel cannot be made, it should not be used. All children should be taught how to check for nicks and bends in knives before they use them. They can also be responsible for cleaning debris off a blade before they store it safely. Younger children should not sharpen sheath knife blades, older children can learn this skill under supervision.

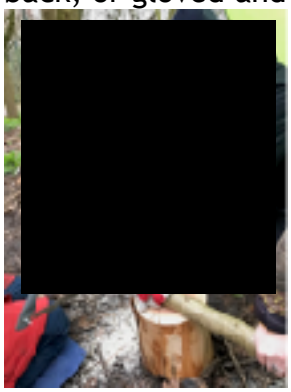
Bow saw	Bow saws should be stored with the tension released, clean and dry, free from any debris from cutting. Saws should be hung with their protective cover on. If a blade is dull, it should be replaced (not sharpened) as it is serrated. Blades should be oiled to prevent rust. Before use, the blade tension should be restored so the blade is taut. Bow saws should be transported with the protective blade cover, in a locked box or strong bag. For primary aged children, it is not appropriate have them maintain a saw, but they should be shown how to ensure the blade is clean using a gloved hand. Older children can be taught how to release the tension on a bow saw.
Rope	The two main issues in maintaining rope are wear and tear and moisture. Ropes should always be left to dry after use and stored in a dry area. Ropes should be folded and tied away to prevent tangling. Before use all ropes should be checked for damage or unravelling. Frayed ends can be tied off with a knot and if a small nick is noticed in a rope holding e.g. a tarp, then the damaged area can be tied off. Damaged ropes should not be used where there will be heavy weights e.g. rope bridges or swings. Children can and should be taught to maintain rope and cords: before they use them, to check for signs of fraying/ wear and tear. They can cut worn pieces of cord off, but may need support with ropes and should show a FS leader anything they are not sure of.

Q3. Describe the safe step-by-step use of 2 different hand tools of your choosing in the context of Forest School

To answer the question, you need to take into consideration the following:

1. *Differentiation, age & developmental stage of participants*
2. *Previous experience of participants*
3. *Ratios*
4. *Insurance*
5. *Appropriate safe techniques*
6. *Safe working areas and distances*

Tool name	Step-by-step process
Sheath knife	Sheath knives should only be used by a qualified Forest Schools practitioner, who has appropriate insurance and training. Groups should be of 8-16 with at least 2 adults. One adult should always oversee any knife activity. Talk through the script for safe for a sheath knife use (see page 88 of the Forest School handbook). Depending on the activity, children should also have an appropriate glove (e.g. for whittling). If using a knife for wood splitting, gloves should not be worn. Children should work 2 arms and 1 tool distance apart, using a log or other flat surface to work on if splitting. If whittling, children should be shown the 2 correct sitting techniques of elbows on knees to the front, or over to the side, knees together. 

Bow saw	Bow saws should only be used by a qualified Forest Schools practitioner, who has appropriate insurance and training. Groups should be of 8-16 with at least 2 adults. One adult should always oversee any sawing activity. Talk through the script for safe for a bow saw use (see page 87 of the Forest School handbook). Children should work in pairs, both of whom should have access to thick gloves (although no glove is worn on the handle holding hand). Bow saws should be at the correct tension. Children should work 2 arms and 1 tool distance apart, using 2 logs or other flat surface to work on if sawing. Children should kneel on mats opposite one another, so that they can swing straight out from the elbow easily. The leader should model supporting the log being sawn by putting a gloved hand through the saw to hold it steady. The saw is used with a push and pull action between partners, who constantly communicate about push and pull and speed. The person holding the handle has the other hand behind their back, or gloved and holding the log further down. 

Q4. Describe 4 different types of knots based on their use and explain the process of facilitating knots with participants

Use	Knot name and process	How it can be taught
Joining two ropes together 	**Reef knot** The right end of the rope- pass it over the left and under. Then take the left end of the rope and pass it over the right and under. Pull the ends tight (holding them flat).	"Left over right and under. Right over left and under." It looks a bit like an 8 if done correctly.
Attaching a rope to an object 	**Clove hitch** Make 2 loops of a rope- a left loop and right loop, then place hte left loop on top of the right loop. Place the loops over the top of the stick and pull both ends tight.	Make a q shape, with the tail dangling behind. Make a p next to it, with the tail dangling in front. Slide the p behind the q. The stick or object goes in the hole of the p and q and the ends pulled tight. A cross is formed if done correctly.
Attaching 2 objects together	**Square lashing** Attach a clove hitch to one stick and place another stick across at 90 degrees. Take the rope and beind the horizontal (right) stick, infront of the vertical, beind the horizontal (left) and in front of the vertical. Repeat 3 times. Tigthen with frapping (wrapping the rope in between the 2 sticks a few times) and fasten with a reef knot.	2 sticks make a cross- 1 is the body of a person, the other is the arms. Use a clove hitch to attached the rope and make a x with the sticks. The rope passes behind the right shoulder, over the belly, behind the left shoulder, over the neck. This is repeated several times, then the rope wrapped round between arms and body to make it stronger. Tie it off with a reef knot. 

Tensioning a rope	Tensioning Start with the working end from an existing hitch and wrap the rope in the opposite direction around the back of the tree, making sure to catch in the line that needs to be tensioned. Pull this tight, while holding the rope beeing tensioned to maintain tautness. Take the end over the tension line and wrap it in the opposite direction around the back of the tree. Repeat this until the line is at the required tension, then tie off with a series of 2 or 3 half hitches. 	Tensioning This is used to tighten a rope to an object once it has been attached already with, for example, a timber hitch or Siberian hitch. The aim is to make the rope line taut by pulling the line from opposite directions by wrapping the rope around the back of the tree and over the line a number of times. 

Q5. Explain how to make 4 craft items using a range of techniques (at least 2 items should be made using woodworking hand tools) and describe the process of facilitating craft making with client group

To answer the question, you need to consider your choice of materials, as well as tools appropriate to the age and development stage of the participants. You also need to consider
the following techniques:

1. *Woven*
2. *Joined*
3. *Shaped*
4. *Carved*
5. *Split*

Craft name 1	Treasure maps
Step-by-step making process	The group is divided into smaller teams: the object is to hide some treasure and create a map to help the other team find the treasure. Some supporting materials can be given (e.g.paper, chalk and pens), although the maps can be made entirely using materials found on the site. Each team decides where to bury its treasure and then create a map (on the ground, on a tree trunk): these maps can be 2D or 3D, figurative or literal.
How it can be taught	Treasure maps are a good way to familiarise groups with a new site and guide them in becoming aware of different features. It is a good way to build team skills as children work together in both creating the map and in finding the treasure of the other team. Children are encouraged to explore all layers of the forest, from ground to canopy as they can hide treasure at any level. The 3D nature of the map helps to show what level the treasure is buried on.
Photo(s)	 

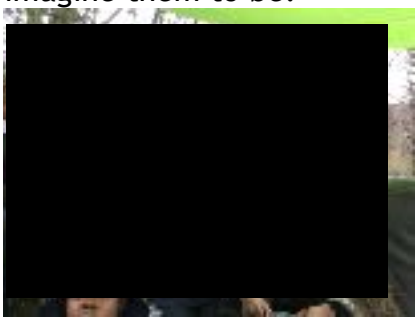
Craft name 2	Hapazome
Step-by-step making process	Materials needed: white cotton cloth cut into forearm length squares, a mallet and fresh leaves and plants. Children should gather a set small number of leaves and flowers (being reminded of those that are poisonous or sting). These are then placed on one half of the white cloth, which is laid on a flat surface e.g. log. The other half of the cotton is folded over and smoothed flat. Using a mallet, the cloth with leaves inside is hit repeatedly, until colour from all the leaves and flowers can be seen through the cloth. It is then unfolded to reveal a picture and the based leaves discarded. Note: If making a mallet, a bow saw and sheath knife are needed. Cut a line all the way round a piece of straight 3-4 inch wood about 1-2cm deep about one hands length in from the end (a stop cut). Bow saw the whole piece off another hand length away. Use a bill hook to trim away the outer part of one half, until you have a rough handle shape. Use a sheath knife to whittle the handle to the correct size for the user.
How it can be taught	Hapazome can be taught in conjunction with plant and flower identification, as children gather the materials for themselves and identify plants and flowers in the process. It can also be taught alongside woodwork skills of making the mallet themselves, using fresh hardwood such as hazel, a bow saw and whittling knife. Hapazome can be taught as stand alone with younger children, using sturdy sticks or rolling pins for the bashing. Children can use their knot skills by creating a picture frame using sticks and square lashing: the hapazome cloth can be inserted into the frame and hung in the woods or classroom.
Photo(s)	 

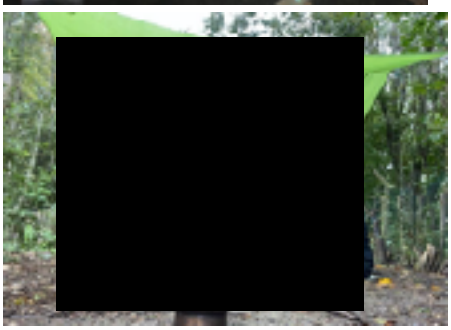
Craft name 3	Natural chalk painting
Step-by-step making process	Using a bow saw, chop 1-2cm thick rounds off straight green wood (approx 5cm across), creating a medallion or cookie. Using a palm drill and a flat surface, make a hole near the top of the medallion. In a pestle and mortar, grind chalk into a fine powder, then share this amongst as many small bowls as you have natural dyes. Add different dyes to each bowl, for example: crushed beetroot, red clay/ clay powder, tumeric, juice from crushed nettles or spinach, crushed berries (raspberry). Gradually add a small amount of water to the chalk mixtures, while stirring until it becomes the consistency of paint. Thread the medallions with string, then paint them using the natural paints.
How it can be taught	Any dyes can be used and provides a good teaching point for the seasonality of plants and berries. Naturally occurring chalk is a good way to learn about different soil types. This can be taught for making a specific item e.g. medals, jewellery, etc. Or it can be a way for children to explore colour mixing, blending using natural materials. It can be taught as part of schools based curricula that are exploring, for example, cave painting, the stone age, or art from around the world.
Photo(s)	 

Craft name 4	Wand or knife making
Step-by-step making process	Harvest some straight, green wood, such as hazel or sweet chestnut. Cut lengths roughly the size of the child's forearm (slightly shorter for a knife). Go through a safe technique and posture for whittling (see tool use section). If making a spreading knife, find the middle of the stick and whittle one end into a flat shape (both sides flat) and keep the end rounded, not pointed. The handle can also be carved with patterns. This flat knife, if smooth enough, is good for reading butter or jam on toast. To make a wand, keep one end as a handle (only a hand sized length) and whittle the rest of the wood, keeping the shape cylindrical throughout and as smooth as possible. The end should be blunt. Again, patterns can be carved into the handle id the whittler is able (you can lean on a flat, hard surface for this). A pencil can be carved in a similar way and elder is particularly suitable as the centre is soft and can be hollowed out to allow for a piece of charcoal to be put inside.
How it can be taught	Any children using knives need to be taught how to use the tools safely first. These smaller whittling projects are great for developing fine moor skills and hand/ eye coordination. Butter knives can be made alongside any outdoor cooking. Wand making is an easy way for children to start with whittling as they only really have to remove the bark from one section, however they can make them ornate if they are more competent. Wands can be used around the forest to cast spells…. Because this is using green wood, children will also learn about coppicing and how to safely prune green wood.
Photo(s)	 

Q6. Describe the process of erecting group shelters using tarp or natural woodland materials and explain the facilitation process with participants

To answer the question, you need to explain the process of erecting a shelter by describing the following:

Purpose	The purpose of any shelter is to provide shelter: from rain, wind, snow or sun. A shelter protects people and equipment underneath it and also provides some separation of 'zones' of Forest School for example, tool area, food area, etc. Shelters can also be used as play areas, and this is especially true if children have made the shelters themselves using natural materials- these become homes, dens, caves- whatever the children imagine them to be. 
Site conditions	A flat surface is preferable for any shelter and the ground should be cleared of debris. If making a tarp shelter, trees will need to be spaced so that ropes can be tied to them. If a natural shelter is being made, then a floor space large enough needs to be found. Checking for deadwood in trees above is important and its best not to use tarps on the ground if it very muddy/ wet. 

Weather conditions 	Shelters are used to protect against weather, but if it is really windy they should be put up with caution. It is difficult to put up tarps in rain, but possible. If feasible, erect tarps for group sessions beforehand if it looks like really rainy weather: this will mean instant shelter and people stay warmer/ drier! If erecting shelter to protect from sun in the summer, then the moving position of the sun needs to be considered. Only heavy duty tarps should be used on ground level (espeically if it is wet or snowy).
Materials available	Rope and tarps are required for a man made shelter. Lightweight tarps are good for using higher in the understory or shrub layer. Heavy duty tarps are needed for anything touching the ground, such as an envelope design. Natural shelters require straight wood poles that can take the weight of leaves/ debris. These may need to be chopped or whittled to size. Any leaves/ debris can be used as cover, however dense brush such as coniferous trees provide great cover.
Rationale and design	The design of a shelter will depend on what it is intended for. If it is a den for play with small children, then a smaller debris shelter can be created with them. The design should be simple enough that they can be involved in creating it. The design of a tarp shelter should factor in weather conditions and will, to some extent, be determined by the trees and space available. It needs to be secure, stable and safe.  

Construction techniques	Tarp shelters: a rope is attached between 2 trees to create a ridge line. The tarp is placed over this and can be configured in many ways, e.g.- in an arrow shape, as an a-frame, as a wedge, flat as a fly tarp, as a lean to. Further ropes are attached to the corners/ centre of the tarp and secured to make sure the tarp is tight and rain can run off it (not pool in it). Guys lines or sturdy poles can be added if there aren't trees to attach ropes to. Natural shelters: long, sturdy, straight wooden poles are required (ideally with a y shape at the top. These can then create a lean to style den or arrow shape shelter. For the latter, a tripod using 3 poles needs to be created , which smaller logs can be leant against to create the sides. This is then covered in leaves/ natural material. For a lean to a rectangular frame needs to be made with 3 strong pole in the ground, and one place across the top. Logs are leant against it to create a back wall. This can be covered in leaves or natural material.
Dismantling process	Natural shelters should be dismantled in reverse order to being erected- cover first and stabilising logs last. Materials should be returned to where they were found and if green wood was used it should be placed so that no trace is left. similarly, tarp shelters should be dismantled in reverse order, with all ropes tied into neat bundles and tarps folded (and dried if necessary). No ropes should be left in trees.
Group interaction	Whether building a tarp shelter or from natural materials, children will have to work together: partly for practical reasons -it is very difficult to erect a shelter by yourself- but also because more ideas and hands often make for a better shelter. Children will need to discuss issues such as site, which trees to use, knots required, materials, etc. They will constantly be assessing what is required, what modifications are needed and how best to achieve that. It is a reflective and dynamic process.

Ecological impact	Shelters will be a place where people gather, so there will be plenty of footfall, compacting the ground. Leaf litter and debris that is essential for soil and ecosystem health will also have to be cleared, so it is important to return this when clearing a site and also to rotate where shelters are placed. Excessive use of ropes on trees can damage the bark, so mindful use of these is needed. If natural materials are gathered for den building, they should be returned as they are important when they decompose and also provide nutrient and habitats for a number of organisms.

How would you teach this process to participants?

Participants should learn to choose a good site for a shelter, including use of trees and assessing risks. Part of erecting tarps will involve teaching knots such as half hitches, siberian hitch, tensioning, reef knots and taut tarp knots. Erecting a tarp should be modelled first, then can be practised in teams, so that they can all bring different skills and support one another. The purpose of a tarp shelter should be looked at with the team, e.g. will it provide adequate cover if it rains? Once tarps are erected, teams can comment on each others to see what has been done well, if they are fit for purpose and how they might be improved: this provides opportunities for giving and receiving feedback. In erecting natural shelters, wood cutting techniques will need to be taught if logs are to be chopped or whittled and this may also entail pruning techniques. There are teaching opportunities for the importance of dead wood, leaf litter etc when building natural shelters.

Q7. Describe the process of building, lighting and managing a camp fire safely and explain the facilitation process with participants

*To answer the question, you first need to explain the process of **siting a fire** by describing the following:*

Site conditions & safe positioning	Any site must be assessed before setting a fire and these conditions considered: • Is the area clear of flammable debris? • Is the soil flammable? • Are there overhanging branches/ leaves? • Are there trip hazards nearby? • Is there enough space to be sat around a fire and for safe escape routes? • Would other people or animals (in public spaces) be at risk if there was a fire here? • Will strong winds affect or spread fire in this area?
Site permissions	The landowner or manager must have given permission before any fires are lit. There must be a responsible, trained person with the fire at all times, who will ensure the fire is extinguished and the area safe before leaving.
Fire legislation	Anyone lighting a fire for Forest School must have made aware relevant stakeholders (e.g. schools, nurseries, parents) and have the permission of the landowner. No fires should be lit during peak fire risk e.g. very windy conditions. Fire equipment (blankets, gloves) will comply with all regulations.
Escape routes	A map or plan of the fire area should be created, detailing escape routes that avoid collision and congestion. Children should practice these routes before any fires are lit and how to move safely around the fire area.
Soil Type	Fires can only be made directly on the ground if the soil is no-flammable (there are clay, stony soil and brown/ muddy soil). Peat soil, leafy and woody areas should not have fires built directly on them as they are flammable.

Site preparation	The area should be: • Free from trip hazards (brambles, logs, sticks, holes, lumps) • Away from other flammables (tree roots, overhanging canopy). • Off the soil (e.g. in a fire bowl) is the soil is flammable. • Marked e.g. a stone circle of non pourous stones or large wet logs. • Free from debris (leaves, people's debris)
Safety equipment	To ensure the site is safe, these will need to be within easy reach: • A bucket of water • Fire blanket • Fire gloves • First aid kit

Managing the surrounding area	The impact on the surrounding area should be considered, for example rotating the fire area over seasons to prevent damage from footfall, frequent use, tree and canopy damage. Deadwood is an essential part of the ecosystem in terms of fauna habitat, so removal of deadwood for fuel should be managed carefully. 
Seating distances away from fire pit	Seating should be stable and 2 arms length away from a fire. Seating should not be easily moveable or at risk of toppling forwards.

Minimising ecological impact	Fires should always be kept as small and manageable as possible for safety but also to minimise the environmental impact. Fire bowls and Kelly kettles, for example will reduce the impact of the fire. Damage above and below the ground should be considered before lighting a fire, including tree canopy and root damage. 

*You then need to explain the process of **building a fire** by describing the following:*

Building the fire pit base and surround	If a fire is being lit directly on the ground, then once the soil type has been determined, the top leaf layer should be cleared. A clear, manageable fire area should be marked with non-porous rocks (porous rocks may explode) or damp, large logs (which can be held in place with tent pegs). This area can then be built on with suitable kindling and fuel (see below for method).

Types of fire Lays for different purposes	The waffle or pyramid method of laying kindling and sticks in flat rows 90 degrees to one another has the benefit of allowing plenty of oxygen flow. This is particularly suitable for fire bowls with a curved bottom, where a flat layer of base wood can be made. It also works well with small pieces of kindling in a small space such as a Kelly kettle. The tepee method of placing kindling in the round is useful when the logs are round and of various shapes and sizes: it works well on flat ground. 
Non-toxic types of wood to burn	Hardwoods such as oak, ash, sycamore, birch, beech and hazel are non-toxic and burn for a long time. Some coniferous trees (e.g. spruce) burn hotter and faster. Wood that has paint on it should never be burnt because of the potential toxins in the paint. Yew contains toxins so should not be burnt. As a rule, if a plant has the name ‘poison’ in it, its best not to burn it. 

Weather considerations	In heavy rain a tarp can be strung up over a fire pit, but this can cause smoke to gather under and it is harder to find dry wood that won't cause heavy smoke. Fires should not be lit in strong winds for safety reasons. In very hot, dry periods, the ground can be doused with water before fire lighting to minimise the risk of fire spread.

*You then need to explain the process of **lighting a fire** by describing the following:*

Range of fire lighting methods including fire strikers	A number of methods can be used to ignite a fire: matches are more hazardous for younger children (and lighters can be tricky to manipulate), but fire strikers allow for children of all ages to start a fire. Suitable tinder such as cotton wool, dry straw/ grass are placed in a fireproof/ non-heat conducting dish (such as a shell) and the fire striker struck towards it until the sparks cause the tinder to catch alight. The contents can then gently be tipped on to the prepared tinder.
Types of tinder, kindling and fuels	Natural tinder can be used: dry grass/ hay, very small dry twigs. Cotton wool is flammable and easy for children to use. Kindling needs to be dry and organised in size order and easily accessible to make it easy to feed the fire in the early stages. Any dry wood can be used as fuel, which can be found hanging as dead wood in the canopy layer. Branches on the ground are often too wet to be useful as fuel. Fuel should be gathered before starting a fire, sorted into sizes and easily accessible to feed the fire. 

*Finally you need to explain the process of **managing a fire** by describing the following:*

The fire triangle	The following are needed to start and maintain fire: Fuel (wood, twigs, peat, hay, dung, etc) Oxygen (from the air) Ignition/ heat (Sparks, matches, fire strikers, etc).
Size and types of fires	All fires at Forest school should be small and manageable. They should be appropriate for their purpose i.e. small and contained for a Kelly Kettle, larger and open for providing warmth or for longer cooking.
Management of resources	Deadwood found in the canopy layer is ideal for fire fuel, however it is also important for the surrounding environment, so its use should be managed mindfully. If kindling or tinder is being made using tools, shavings should be cleared after use. Fire safety resources (blankets, gloves, etc) should be kept close (but a safe distance from) the fire in one area, along with a bucket of water and all participants should know where these resources are.

Describe the process of facilitating the safe use of fire with participants, making sure you take the following into consideration:

1. *Differentiation, age & developmental stage*
2. *Previous experience of participants*
3. *Ratios*
4. *Insurance*
5. *Group and behaviour management*

All Forest School leaders need to seek the permission of the landowner/ manager before lighting any fires and check that appropriate insurance is in place, which includes lighting fires with children. Forest school groups should ideally be between 8-16 children, with at least 2 adults, with more adults for younger children. A forest school leader with relevant training must stay with any children inside the fire circle whenever there is a fire.

A clear, physical marked boundary (i.e. with a series of logs) around the fire area will help show where is safe and not safe to walk when a fire is lit. Children will need to be invited into the fire circle by the leader, who will determine what is a safe number according to their age and experience.Younger children will need a higher adult: child ratio, including to supervise those not inside the fire circle.

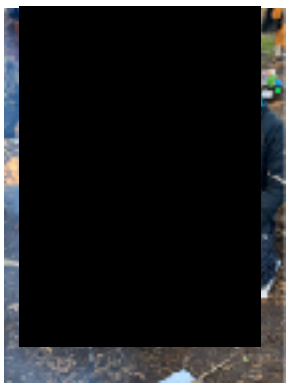
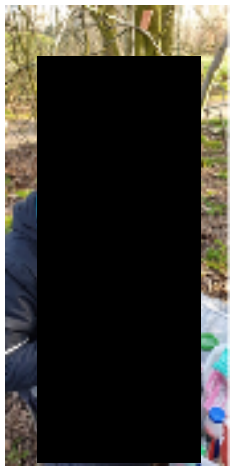
Children of any age can enjoy and participate in elements of a fire. e.g. stick collecting, building a fire. Younger children may find it harder to use fire sticks to light a fire but this will develop with more practice, as long as the adult: child ratio at this stage is kept small.

Before any fires are built or lit, all the safety aspects of site management and fire safety will be talked about with the children. It is important hair or loose clothing is tied back.

Q8. Describe the process of cooking with fire, using 2 cooking methods of your choice and taking food hygiene and safety into consideration

Describe the process of cooking with fire, using cooking method 1

Damper bread

Make a fire: collect dry sticks with children, or bring kindling. Discuss fire triangle and fire safety, check all hair, hats etc tied back. Build a fire using the waffle method (described above) in a fire bowl, which has a clear boundary marked around it. Build the fire up and allow it to die down until the wood is white and glowing (i.e. not large flames).

While the fire is burning down, or before hand, collect green, thin, straight wooden sticks about 1m long. Use loppers and a sheath knife if needed to make one end approx 1-2cm in diameter. Wrap aluminium foil around one (thin) end of the stick, about one third of the way up the stick.

While the fire is burning down, make the dough for damper bread. Anyone cooking should have clean hands and the importance of keeping things we eat with clean. Follow a recipe using self raising flour, milk (or other ingredients if there are dietary requirements), oil and salt and mix in a bowl or bag using a clean hand until the dough is stretchy and pliable. Children can then use a golf ball size ball of dough, to roll it into a sausage shape in their hands and wrap it round the aluminium foil end of the stick.

Cooking: sitting or kneeling the bread should be held over the fire, near the glowing embers, or white hot wood. Gentle rotation of the stick will mean the bread doesn’t burn on one side but cooks evenly throughout. When it is cooked the bread can be peeled off the stick carefully , reminding the children to let it cool a little before eating.

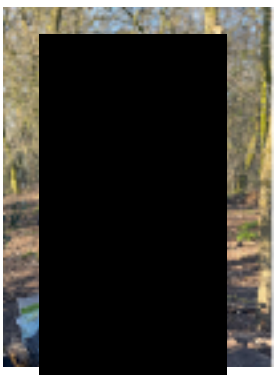
Describe the process of cooking with fire, using cooking method 2

Vegetable Stew in a Dutch oven

Make a fire: collect dry sticks with children, or bring kindling. Discuss fire triangle and fire safety, check all hair, hats etc tied back. Build a fire using the waffle method (described above) in a fire bowl, which has a clear boundary marked around it. Build the fire up and allow it to die down until the wood is white and glowing (i.e. not large flames).

As the fire is burning down, wash hands and use a clean flat surface to chop vegetables for the stew e.g. onions, garlic, peppers, carrots. Cooking with vegetables and tinned pulses leaves less risk of food poisoning that can come with handling raw meat and also makes it easier to cater for all dietary requirements. When the fire is glowing, not flaming, place a grill over the top of a fire bowl using fire gloves and place a Dutch oven on top. Add oil and fry the vegetables and add liquid/ tomatoes/ pulses as the recipe requires. An adult should be nearby for this part as the smoke/ steam can be strong. The lid of the Dutch oven will keep the heat in and the stew will cook quicker, so it is important to check it isn't sticking or burning. Fire gloves and a hook to lift the lid will be needed. Create an area beside the fire that is clear of debris to place the Dutch oven when the stew is cooked.

Ingredients should be stored at correct temperatures prior to the session and checked to ensure they are in date . A cool box can be used to transport and store any ingredients requiring refrigeration and these ingredients must be used within 2 hours. All utensils, crockery etc should be checked to ensure they are clean before use.



Food hygiene: anyone touching food should have washed their hands and it is important to talk with children of all ages about safe food handling/ germs and bacteria. There should be water/ soap available for hands and washing up. Younger children may need more support with this. All medical records must be checked to ensure that no food item or ingredient is given to an child or adult with an allergy to it.

All Forest School leaders need to seek the permission of the landowner/ manager before lighting any fires for cooking and check that appropriate insurance is in place, which includes lighting fires with children. Forest school groups should ideally be between 8-16 children, with at least 2 adults, with more adults for cooking with younger children. A forest school leader with relevant training must stay with any children inside the fire circle whenever there is a fire. Depending on their experience of open fire cooking, all children may be invited into the fire circle to cook at one time e.g. marshmallows, damper bread, after a dynamic risk assessment from the leader. If a whole group is cooking together, then how to sit/ hold sticks, etc will need to be covered first.

Children need to be made aware of burns from food as well as fire, especially things like marshmallows and younger children may need a certain number to count to before they eat. Children should not eat from the stick, but their hands. All children will need to be made aware of cooking certain foods thoroughly e.g. meat and learn how to check if something is cooked properly.

Working with smaller groups who have been invited into the fire circle is more appropriate when using Dutch ovens or for children placing items to be baked directly into the fire, for example. This will require fire gloves and is for those more experienced with open fire cooking.

Q9. Describe the process of extinguishing fires safely and leaving the site safe

*To answer the question, you need to explain the process of **extinguishing a fire**, making sure you take the following into consideration:*

1. *The site geography*
2. *The need to minimize ecological impact on soils and woodland ecology*
3. *The need to follow Leave No Trace principles*
4. *Cross referencing to management plan and ecological impact assessment*

Fires can only be made directly on the ground if the soil is no-flammable (there are clay, stony soil and brown/ muddy soil). Peat soil, leafy and woody areas should not have fires built directly on them as they are flammable. Ideally, a fire bowl will be used, which limits ecological impact and is easier to follow the principle of Leave no trace. Water should be used to extinguish fires, pouring gently and being mindful of the smoke that will be created. Water should be poured until the steam stops. Whenever possible, all fuels should be burnt off to ash. The Leader should ensure that any large remains of wood, especially when using logs, are separated from one another.
Fire bowls should be left to cool completely and the contents removed from the site and disposed of. Open fires should also be extinguished with water and, once cooled, the area cleared as far as possible. If it is being used regularly for open fires, then a plan should be in place to make sure there is fire area rotation so that the ecological impact on one particular area is minimised and to give highly impacted ground a chance to recover.

Describe the process of facilitating safe extinguishing of fires with participants, making sure you take the following into consideration:

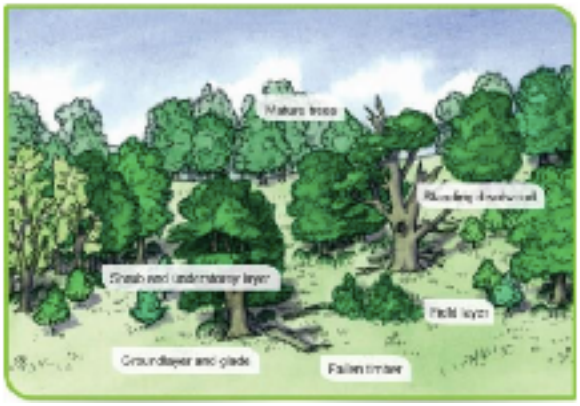
1. *Differentiation, age & developmental stage*
2. *Previous experience of participants*
3. *Ratios*
4. *Insurance*
5. *Food hygiene procedures and policy*
6. *Group and behaviour management*

All fires must be extinguished at the end of a session . All children should be taught about extinguishing a fire safely but a leader should be present at all times to do this. Water should be used to extinguish fires, pouring gently and being mindful of the steam that will be created (so children- especially those with asthma- should be well away from the fire).Water should be poured until the steam stops- children need to be well away from the steam. Children can ‘make a wish’ as they pour water on to the fire, creating a small plume of smoke with their wish.
Whenever possible, all fuels should be burnt off to ash. The Leader should ensure that any large remains of wood, especially when using logs, are separated from one another. Large amounts of ash need to be dispersed and more experienced children can help with this once cool. This must only be done when it has totally cooled, preferably the following day. It should be finely scattered through the woodland to enable natural decomposition.

LEVEL 3 PORTFOLIO TEMPLATE
UNIT 5 – THE WOODLAND ENVIRONMENT

Q1. Define and compare the structure and biodiversity of native broadleaf and coniferous woodland ecosystems.

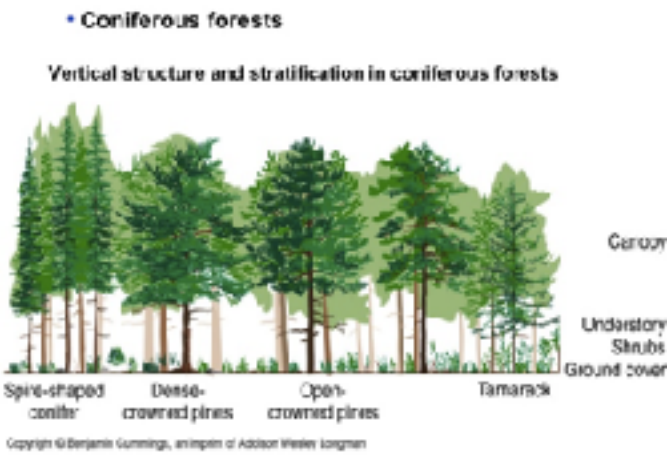
To answer the question, you need to describe the vertical and horizontal ecological structure of ***British broadleaf woodlands.***



Vertical layers	
Below ground	Soil dwelling invetebrates such as worms and millipedes live underground, bringing down the dead vegetation from ground level. Tree, shrub and plant roots are spread throughout the soil, along with dead and decaying matter and rocks and water.
Ground	As this layer has much rotting vegetation and dead wood, many fungi, lichens and mosses can be found here, along with a range of invertebrates and insects such as stag beetles.
Field	Plants and ferns growing just above the ground, including annual and perennial plants, e.g. nettles, bluebells, violets. Many mammals (foxes, badgers) live on the plants and their fruits at this level and this level can have high concentreations of insects.
Shrub	Taller plants and the smallest tree saplings, including brambles, pyracantha, dogwood. Butterflies and other flying insects live in this area as well as mammals such as squirrels (which cover the full vertical range of a forest).
Understorey	Shorter trees and taller shrubs, e.g. hawthorn, hazel, as well as the saplings of taller trees listed above. Any flora or fauna living in these trees or shrubs will also be found here. Birds such as cuckoos may next here.
Canopy	The tops of tallest trees and their leaves, e.g. oak, ash, sycamore, beech and any flora or fauna living in the trees at this level, e.g. birds, insects, ivy.

Horizontal layers	
Rides	Internal rides are important structural elements within woodland, providing valuable habitat for a wide range of wildlife which cannot live in high forest areas. A diverse range of sun-loving plants and insects thrive in these more open spaces.
Banks	These can provide natural fencing and to some extent can prevent overgrazing from species such as deer. Banks tend to support plants and shrubs rather than trees.
Hedges	Made from a wide variety of deciduous plants and shrubs including hazel, bramble, alder, dogwood and holly.
Edges	Here there will be a greater diversity of species than deeper in the woodland, but the flora will be younger and have a shorter life cycle. The canopy here is less dense, allowing for faster growth, e.g. of brambles, which in turn provides habitat and food for smaller mammals and birds.
Glades & water	In glades larger patches of habitat can be maintained, including more substantial areas of scrub along the woodland edge. Streams, rivers and rivulets flow seasonally, increasing the diversity of species to include fresh water based flora and fauna.
Aspect & topography	The aspect of a broadleaf woodland will depend on its location, e.g. mountain, hills, valleys, lake. The topography will depend on the range and diversity of species present.

*To answer the question, you need to describe the vertical and horizontal ecological structure of **British coniferous woodlands**.*



Vertical layers	
Below ground	Confierous trees tend to grow in acid and sandy soils and plantations are often located on land considered unsuitable for agricultre. Invertebrates that thrive in this kind of soil are plentiful, e.g. termites.
Ground	As this layer has much rotting vegetation and dead wood, many fungi, lichens and mosses can be found here, along with a range of invertebrates.
Field	Plants that grow in acid and sandy soils such as bracken, heather, wintergreens and bilberry. In Scottish confierrousn woodlands, the field layer also supports birds such as black grouse and capercaillie. Lower light levels can inhibit much of the plant growth at field level.
Shrub	As coniferous woodlands in the UK tend to be planted, saplings at the shrub layer are often removed. In well managed woodlands, tree dwelling mammals such as (red) squirrels and pine Martens can thrive.
Understorey	Coniferous woodlands can be dense, thus reducing light in the understory layer and preventing sapling diversity. In some coniferous woodlands there are aspen and willow, although it is mainly pines (as outlined below).
Canopy	This will have the tops of the tallest trees, although the diversity of species will not be as large as broadleaf woodlands. The only conifers native to UK are Scots pine, Juniper and Yew. There are conifers introduced to the UK and common on plantations such as Sitka spruce and Douglas fir, grown for its timber.

Horizontal layers	
Rides	Wide rides may create a pathway to other areas of vegetation such as moor or heathland, although these may be dark and therefore limited in species diverstiy.
Banks	Conifers tend to grow up rather than out, leading to exposed banks around coniferous woodlands, more light and a greater diversity of species than deeper in the darker woodland.
Hedges	Coniferous plantations do not tend to be surrounded by hedges, although gorse bushes are not uncommon.

Edges	Due to the acid soil type, these usually are heathland and support a range of heathers and shrubs.
Glades & water	There are plentiful rivers and streams in coniferous forests as they are often located on higher ground. Better managements and clearance of these can allow for indigenous plant species to thrive.
Aspect & topography	Confierous woodlands are characterised by the topography of the land and the density of the tree planting. Many are located on hills and mountainsides and other areas considered poor for agriculture.

Define the following ecological terms

Biodiversity	Biodiversity is the variability, the variety and number of living organisms, including diversity between species, organisms and of the ecosystem they are part of. Biodiversty can be broken into 3 areas: genetic diversity (the total array of genes within any population); species diversity (the number of differenct species in a population) and community diversity (the number of different species within an area).
Abiotic elements e.g soil and water	Abiotic elements are the non-living parts of an ecosystem, for example light, water, rocks and heat. They are an essential part to the biotic factors (living), for example without sunlight and water (abiotic factors) plants would not be able to photosynthesise and thus without these primary producers no other life could be sustained.
Natural succession	Ecological or natural succession is the process of change within ecosystems over time, which are dynamic and constantly changing. This period of time varies from short to millennia. Primary succession occurs in new habitats, whereas secondary succession takes place in the same habitat, which has been altered somehow.
Ecosystems	An ecosystem is a biological community or ecological unit or interacting organisms (“home”). The ecosystem is defined by its inhabitants and their interactions. An ecosystem is related to species diversity and how it thrives depends on its location and abiotic features.

Habitats (including standing dead wood)	A habitat is the place where living things live and where living organisms can find the necessities to survive: food, shelter, protection and others in the species to reproduce with. Standing dead wood provides a habitat for a number of species including mosses, fungi, lichen and inveretbrates, with 40% of woodland life dependent on it for survival.
Life cycles	A life cycle is the circular process of living organisms from birth to death, which includes all the aspects of change and growth through each stage of life. A plants life cycle starts with a seed, which germinates, grows roots and shoots and then flowers. This leaders to pollination and fruiting (thus ensuring seed is dispersed to start the cycle again) and death. Life cycles look hugely varied depending on the species.
Seasonality	Seasonality refers to the various time periods in a year that are characterised by differences in weather, temperature and light which impact species life cycles. Woodlands in the UK for example, will look very different in winter than summer.
Food chains/webs	A food chain is the linear passage of organisms where energy and nutrients are passed on as one organism consumes another. A food chain includes a primary producer e.g. plants, which are then consumed by a primary consumer e.g. a herbivore (a caterpillar). Secondary consumers (carnivores- say, a bird) eat the primary consumers and they in turn may be eaten by a tertiary consumer (a cat). Apex consumers are at the top of a food chain . A food web shows a more complex picture where multiple producers and consumers interact with one another and the trophic levels act more as a web than a linear process.
The effect of light and photosynthesis	Photosynthesis is the process whereby plants turn carbon dioxide and water into glucose using sunlight, and produce oxygen in the process. The sunlight is captured in a plants chlorophyll, the gases pass through stoma on the leaves and the water is absorbed through the roots. This process cannot take place without sunlight.
Wildlife corridors in relation to ecosystems	A wildlife corridor joins 2 or more areas of similar wildlife or habitat and allows for species to reproduce and thrive as genetic diversity is increased. Ecosystems are strengthened with increased wildlife corridors and where they are not present, then ecosystems can be damaged or destroyed.

Q2. Explain why flora and fauna identification is important for Forest School leaders

To answer this question, you need to write a short explanation, which should include some of the points listed below:

1. *Identifying protected species*
2. *Feeding into woodland management plans*
3. *Sharing knowledge with participants*
4. *Following Health & Safety*
5. *Using plants for firewood, crafts or foraging*
6. *Showing consideration for the site's sustainability*
7. *Showing consideration for lifecycles and seasons*

FS leaders overarching role is to keep the children in their care safe and being able to identify flora and fauna is an essential part of this: whether they know them by sight or can accurately use an ID chart, FS leaders need to be able to alert those in their care to plants and animals that sting, poison, bite, etc. On the other hand, being able to identify a range of flora and fauna also means knowing their uses and benefits and making children aware of how plants in particular are widely used, for examples in medicines and for eating. FS leaders also need to be able to identify which flora are useful for craft activities and fire making and to know how much of these can be used sustainably. Any use of trees or plants for firewood or craft should always be done with the environmental management plan of the site in mind. e.g. which plants and trees can be used, how much, from which areas, which need to be cleared and whether plants be added. With the climate crisis and increasing loss of biodiversity, it is becoming more pressing that children are able to identify those flora and fauna which are dwindling in numbers: by educating them about habitat loss and the impacts of humans on nature, they will take greater ownership in trying to protect species and habitats. Through learning about features, uses, habitats and life cycles of flora and fauna, the children not only gain knowledge, they are in a better position to use this learning to educate others and care for the environment.

Q3. Create an accurate Flora and Fauna ID learning resource for your own client group and site

To answer this question, you need to produce detailed identifying traits for 24 species across a range of flora and fauna, to include:

Trees (4)

Tree name	Description	Habitat	Lifecycle	H&S	Uses
Hazel 	*Deciduous shrub or small tree living up to 80 years. Distinctive catkins in Spring*	*Found in the understorey of oak, ash or birch woodland, or in scrub & hedgerows*		*Risk of allergy to nuts*	*Wattle Hurdle making Stakes & binders Walking sticks Thatching*
Holly (ilex) 	Pointed, sharp evergreen waxy leaves. White wood. Heavy, hard and fine grained. Red berries in winter.	Found in broadleaf woodlands at the shrub and understory layer and in hedgerows.	Seed- roots and shoots- stem/ trunk and leaves- flowering and pollination- fruit- death.	Berries can cause vomiting.	Berries and leaves used for decoration, fuel and fencing. Can be used for tea (mate).
Beech (fagus) 	Elliptical leaves with a pointed tip and coarse teeth. Smooth, light grey bark. Small fruit in a husk	Found in broadleaf woodlands at the understory and canopy layers.	Seed- roots and shoots- stem/ trunk and leaves- flowering and pollination- fruit- death.		Fuel, furniture, cooking utensils, tool handles, carving.
Oak (quercus) 	Spirally arranged leaves with lobes. Catkins in spring and acorn fruit.	Found in broadleaf woodlands at the understory and canopy layers.	Seed- roots and shoots- stem/ trunk and leaves- flowering and pollination- fruit- death.		For large scale building, flooring, barrels, furniture, firewood. Tannin used for leather dying.

Elder (sambucus) 	Stems have lenticles, bark becomes burrowed over time. The leaves are in a symmetrical pattern of 5.	Found in broadleaf woodlands at the shrub and understory layer and in hedgerows.	Seed- roots and shoots- stem/ trunk and leaves- flowering and pollination- fruit- death.	The seeds, stems and leaves of a Black elder are poisonous, but not a common UK Elder (Sambucus nigra).	Flowers in cooking- cordial and wine. Young thin stems good for whittling.

Plants (4)

Plant name	Description	Habitat	Lifecycle	H&S	Uses
Nettle (urtica) 	Serrated leaf, hairy stem, plants 30-100cm.	Widespread across the world, found in woodlands, open areas, urban areas.	Seed- roots and shoots- stem and leaves- flowering and pollination- fruit- death.	Stinging hairs, causing itchy rash.	Cooking- soups and teas. Fibres for cloth.
Ivy (hedera) 	Palmate, lobed, waxy, evergreen leaves. Grows at ground level and as a climber. Visible roots with shoots.	Woodlands and urban areas. Grows at ground level and up trees.	Seed- roots and shoots- stem and leaves- flowering and pollination- fruit- death.	Berries moderately toxic.	As wall cover, floristry.

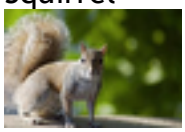
Viola 	Annual or perennial plant, extensive ground cover of dark green leaves and small purple flower in spring.	Northern hemisphere , woodlands, epecially shaded areas.	Seed- roots and shoots-stem and leaves-flowering and pollination-fruit-death.		Edible flowers, ornamental, medicines, perfume.
Wild garlic (alium family) 	A perennial bulb, green long leaves in spring with a strong scented stem.	Native to UK and European broadleaf woodlands, shady and damp areas.	Seed- roots and shoots-stem and leaves-flowering and pollination-fruit-death.	Similar to Lily of the valley, which has poisonous leaves.	Cooking-like a spring onion.

Insects (4)

Insect name	Description	Habitat	Lifecycle	H&S	Uses
Ladybird 	Bright red rounded back with black spots (or vice versa). 6 legs, antennae and pincers at front.	Gardens, woodlands, scrub areas across UK.	Active from spring to autumn, hibernate through winter. Egg-larvae-pupa-adult.	Produces yellow toxin from legs to evade predators, not toxic to humans.	In gardens, eat aphids so a natural pest controller.

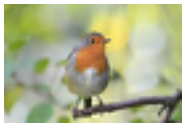
Earwig 	Flattened and shiny brown/ black. Forceps at the front and long segmented abdomen with membrane like wings.	Nocturnal, so hide in crevices and dark/ moist places during the day e.g. in deadwood and under plants.	Most earwigs go through 4-6 melts during their lifetime to grow larger. Egg- nymph- adult (with molting).		Eat aphids, so pest control, but also eat leaves so can damage crops.
Milipede (arthropod) 	2 pairs of jointed legs on most body segments and long so appear to have 1000 legs.	Forest dwellers, amongst leaf litter and can burrow into the soil and soft dead wood.	Egg- larvae- then moult a number of times to grow during adulthood, eating their exoskeleton .		Milipedes are food for a range of small mammals and amphibians and an essential part of the forest food web.
Butterfly (thousands of types) 	Adult butterflies have 2 pairs of symmetrical coloured wings joined to a central cylindrical body with long antannae.	Woodlands, hedges, scrub, gardens on every continent except Antarctica.	Egg- larvae- caterpillar- (Chrysalis)- butterfly. (Usually between 1 week-1 year)		Are biological pest control for some invasive species e.g. wasps.

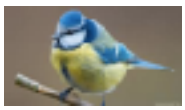
Mammals (4)

Mammal name	Description	Habitat	Lifecycle	H&S	Uses
Fox 	Small to medium size (like a dog), thick orange fur, pointed black tipped ears, long snout and bushy tail.	Rural and urban, especially on the outskirts of urban areas living off wild animals and human rubbish.	Adults give birth to live young in litters, living approx 2-3 years.	Foxes are scavengers so can carry disease and rarely bite.	
Squirrel 	Small, usually grey, with a long bushy tail, pointed ears, long claws and sharp pointed front teeth.	Tree dwelling, scatter hoarders so move between all levels of the forest.	Animals give birth to live young, a single litter annually of about 8 pups. Squirrels live approx 8 years.	Squirrels can occasionally bite.	Can be eaten.
Hedgehog 	Small and rounded, covered in long, straight spines pointing backwards. A pointed snout and small paws.	Nocturnal and hibernate during winter. Spring-autumn live in gardens, woodlands, hedgerows.	Give birth to live young, with no spines, which then grow in. Can live 4-7 years.	Spines not poisonous, but are sharp and can break the skin.	Are eaten in some cultures.

Bat (hundreds of types) 	Small, furry body (brown/ black) with large finger bones with wing-like skin attached for flight. Small eyes (often blind) and large ears for echolocation.	In woodlands and caves in the UK, roosting upside-down during the day (they feed nocturnally usually).	Mothers give birth to a single pup, cared for by both parents. Bats live longer than many other similar sized mammals, up to 20-30 years.	Can bite and carry some diseases e.g. rabies.	

Birds (4)

Bird name	Description	Habitat	Lifecycle	H&S	Uses
Common Blackbird (thrush family) 	Small to medium sized, black feathers and yellow beak.	Gardens and woodlands of the UK, especially deciduous woodlands.	Females lay 2-4 eggs, which are incubated by both parents and hatch naked and blind. The are usually ready to fledge in 2 weeks.		Important in UK folklore.
Robin 	Brown back feathers with a distinctive red/ orange belly.	Gardens and woodlands of the UK, especially deciduous woodlands.	Build nests or nest in holes for the female to lay clutches of 3-5 eggs.		An icon of Christmas cards!

Bluetit 	Small, distinctive pale blue feathers and yellow belly. Bright blue and white head.	Deciduous and mixed woodlands throughout the UK (non-migratory).	Females lay and incubate eggs, which hatch in large clutches of 6-8 chicks. Males provide food until chicks can fledge.		
Magpie (crow family) 	Large sleek bird, black head and back feathers with a white belly and blue streaks on side feathers.	Rural and urban in the UK- woodlands, scrublands, highlands and can nest high in urban trees.	Adult pairs remain together for life, with 5-6 eggs laid in spring, ready to fledge in summer.	Usually eats other eggs, insects, but more tame ones have been know to steal food from humans.	

Fungi(4)

Fungi name	Description	Habitat	Lifecycle	H&S	Uses
Chanterelle 	Yellow ochre colour throughout, thick stem, forked gills and smooth cap- funnel shape.	Coniferous forests and mountainous birch forests.	Asexual reproductions through spores.	Looks like other poisonous non edible fungi e.g. false chanterelle.	Prized in cooking.

Chicken of the woods 	Bracket form with round yellow/ orange bands like coral. Crumbly, wide and fleshy.	Common in the UK on trunks of oak, cherry, yew and willow from spring to autumn.	Asexual reproductions through spores.	Can cause stomach upsets, poisonous if growing on a yew tree.	Edible, and hosts a number of insects.
Stinkhorn 	A thick white stem and sticky green/ brown cap which produces gleba gel to attract insects. Gives of a very strong smell.	Common in the UK in all types of woodlands and gardens.	Asexual reproductions through spores which are distributed by flies attracted to the stick gel produced.	The gleba is inedible.	The very young fungi is edible, but not once it grows a cap.
Fly agaric 	The fungi of fairy tales- white stem and bright red cap with white spots.	Common in the UK in heathlands, on light soil and near birch and spruce trees.	Asexual reproductions through spores and gills.	Highly toxic and can be fatal.	Can be used as a hallucinogen and historically has been used as an insecticide.

See appendix 6 for an ID chart made independently by my FS group of the flora and fauna found in our site Brookmill Nature reserve.

Q4. Describe 3 sustainable woodland management methods to maintain and improve the long-term health of a woodland

To answer this question, you need to write a short summary for each of the 3 methods you choose. Methods can be selected from the list below:

1. *Planting*
2. *Regular timber crops*
3. *Monitoring species*
4. *Rotating sites used*
5. *Managing dead wood*
6. *Habitat creation e.g boxes and habitat piles*

7. *Management of invasive species*
8. *Improving biodiversity*
9. *Techniques such as: coppicing, pollarding, thinning, managed grazing, scalloping and ride management*
10. *Managing and reporting Biosecurity*

Sustainable woodland management method 1

Habitat creation

Making piles of deadwood creates a habitat for a huge number of speiceis,including mosses, fungi, lichen, insects and small mammals. If left undisturbed, dead wood provides a steady, slow-release source of nitrogen back into the soil. Some species can only live on dead wood so it provides a valuable habitat. Human made habitat such as bug hotels are a fantastic way of involving children in helping to create spaces for insects to thrive. Bee hives also provide a safe habitat for these vital pollinators.

Sustainable woodland management method 2

Coppicing

Cutting down certain parts of a tree, or coppicing, has been used as a woodland management system for centuries. When certain species of tree e.g. hazel are cut down, the tree can put out new shoots from the stump. This means that the wood can be harvested and the tree can live for hundreds of years whilst the timber can still be used. Coppicing requires only hand tools and trees can be coppiced in rotation, leaving new wood to grow again. Coppicing can also allow more light into the woodland, leading to greater growth at the field and shrub layer.

Sustainable woodland management method 3

Site rotation

The impact of humans on the forest can vary from footfall impacting the ground, to damage to flora and fauna through fire. It is really important to ensure that such damage is minimised through both appropriate site location and site rotation. If fire is being used, then it is important to note what damage will occur at all levels of the forest, right up to the canopy. Fire bowls help minimised damage, but moving logs to create a fire circle will disturb habitats and so sites should be rotated regularly. Tree climbing and ropes around trees for shelters can damage bark, so trees used should also be rotated. Regular use of paths can damage flora and fauna, so these should be maintained and regular routes changed to minimise impact.

Q5. Describe at least 3 ways of involving participants in sustainable woodland management on a Forest School site

To answer this question, you need to explain the role of the Forest School Leader as a steward of the woodland and describe 3 ways in which participants could be involved depending on age and ability.

FS leaders have a key role to play as stewards of the woodlands and ensuring that future generations both learn about, and take an active role in, caring for and managing woodland areas. As I work on a nature reserve owned and managed by the local council, it is important that I follow their environmental management plan, maintaining dialogue and working alongside to ensure the forest is maintained. As one of the few 'wild' areas in an inner city London borough, it provides children with an experience of of forests in a way other green spaces might not. Part of the stewardship includes human impact and the need to have areas that are primarily habitats for flora and fauna. We help to maintain this through creating animal habitats such as boxes and dead wood piles; clearing invasive species; not disturbing areas with nest animals; species monitoring; not overusing sites and making sure we leave no trace. The children in my group know how important this last principle is and have become frustrated by human rubbish that is blown into our woods by the wind: they have been motivated to clear this themselves (where safe) to make sure "the foxes don't eat it." Given how many children start by being scared of insects, I feel that stewardship of insect habitats is particularly important to engender: instead of squashing/ batting insects we now make sure we 'say hello' with a small wave, which the children really enjoy.

Outlined below are some of the ways we are involved in sustainable woodland management.

Paths and access
Our school has already been involved in the management of Brookmill nature reserve, the site we use. The site had become inaccessible and overgrown through some years of neglect and had become a litter dumping ground. As our class started to use it more, we worked alongside the local council who manage it and started to think about accessibility and access. As we used it more, it became clear which paths needed to be improved and our increased use help the council in accessing a grant and volunteers to improve the site, as they wanted to have FS using it to help manage it better. Paths with gravel have now been built and decking stairs created, which now mean that steep banks and high areas can be used by EYFS children safely. We also regularly clear the site of rubbish that blows in (one side is on a main road) and since the adult volunteers have improved the site the children of all ages are keen to maintain it well.

Bird and bat hotels
One objective of the Environmental management plan is to create nesting sites for birds and bats. Children from our school have already made bee hotels using bamboo. Liaising with the local council managing the site, the FS leader can find out what kinds of nesting boxes are required. Building these boxes at school would be possible for KS2 children as part of their DT and science learning and installed at the site as part of FS. Once installed, any of the FS groups there would be able to monitor nesting at the boxes.

Species monitoring
Our FS group will be involved in helping to monitor certain species at the nature reserve. Up until now there haven't been systematic regular users of the site and now as we are using it weekly or twice-weekly, we will be able to collect data on flora and fauna at the site during different seasons. This will help the children in terms of embedding their knowledge of plant and animal identification as well as providing Lewisham environmental education with information about which wildlife is flourishing. This will also help feed in to their management of invasive species plan in terms of knowing which plants are plentiful. Gathering this kind of data is possible by children of all ages: I would give early years one or two plants or trees to find and make sure they have an adult to help with counting. KS1 and KS2 could be given set squares or specific areas to monitor and would be able to record data.

Q6. Research and summarise 2 articles on the benefits of a connection with woodland and natural environments, referencing physical and emotional well-being and illustrating with your own FS experiences

Article 1

The first piece of research was undertaken by The Woodland trust, titled *The benefits of trees outside of woods, 2017* https://www.woodlandtrust.org.uk/media/1702/benefits-of-trees-outside-woods.pdf
The article's main purpose is to prove through research and literature review the positive benefits of trees on the the well-being of people, even when trees are located outwit a woodland. It is of particular importance as in urban areas access to larger woodland or natural areas is difficult and this article addresses the impact of small numbers of trees or smaller areas of woodland, which is the experience that many urban schools will be offering in their Forest School, with sites often located at the edge of a playground or near built up areas and roads. The Woodland trust has a vested interest in promoting the benefit of trees and as a charity raises money for this purpose and therefore it could be seen that this research will be biased towards their cause. However, this article does reference a wide range of peer-reviewed scientific journals and draws evidence from studies across all areas of the UK.

One of the main findings in the research is the benefits long-term exposure to woodland has on young peoples learning and ability to focus, noting that "Children's attention and cognitive function has been shown to benefit if they live in an urban area with views of trees."(p.16) It has certainly been my experience at FS sessions that children's attention significantly improves in a wooded environment (this is anecdotal and qualitative rather than quantitive and based on my experiences as both their class-based teacher and FS Leader, where they can maintain focus on tasks, instructions and other people talking for much longer periods than in class.). The research also notes the positive impact that time in woodlands has on mental health and behaviour, including those that showed behavioural issues in other areas: "…individuals who moved to greener areas had significantly better mental health following the move, whereas individuals who moved to less green areas showed significantly worse mental health in the year preceding the move." (p.17).

This paper draws together a large body of research on the positive impact of trees on physical health and cites various articles that note drops in rates of stress, heart conditions and improved post-surgical recovery times. They also outline the more general health benefits that come from woodlands and areas with greater numbers of trees: "Trees also provide benefit through promoting physical activity, which is of key importance for the promotion of good health. Parks with trees are used more than those without, streets with trees have more bicycle traffic." (p.18) During my FS sessions one of the clear benefits to the children was through the greater physical freedom to move. Classrooms are confined spaces where children are expected to sit still. In FS sessions, the children are free to move whenever they want, both over larger spaces and when listening to others. The simple act of being able to stand whenever they want seems to have improved their ability to focus: the energy they have to put into not fidgeting in class can be channelled into focusing on the task in hand.

Article 2

***Learning from working with disaffected year 10 pupils*, R. Sylvester in *Forest School for All* (ed) S. Knight, Sage, 2011**

I chose this article on working with older children as much of the research in Forest Schools focuses on early years and the children I work with in my FS sessions are disaffected upper KS2. The aim of Sylvester's 6 week project was to "support personal development, develop social and communications skills, change levels of motivations and attitudes to learning, support the pupils improved understanding of the natural world and ultimately boost self-esteem and self- confidence." (p.96)

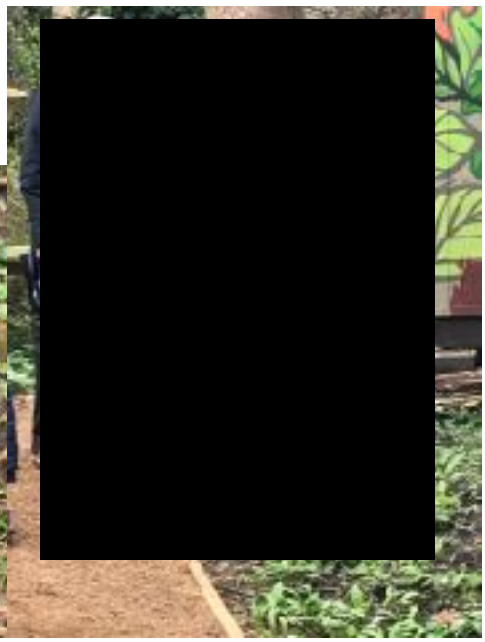
Sylvester notes how important the FS ethos of sessions running over a period of time is, given that it takes isolated or excluded children longer to build trust and engage in new activities. In my first sessions, the children were testing new boundaries, rules and roles and it took a couple of sessions to see some of them emerge from their classroom persona and fully step into a more settled and focussed way of learning. Trust is built over time between all participants and leaders and what Sylverster notes about one activity in latter sessions chimes with my FS sessions: "They initiated and took responsibility for their own game, involving the entire group in agreeing rules and interacting, with no need for adult intervention." (p.101)

The article also highlights how striking a balance between structured activities and play-based learning is key in terms of how children manage their behaviour as they learn to take greater ownership of their choices. It has been my experience that disaffected pupils come with a range of personal, social and emotional issues and these can be exacerbated by both too little and too much direction. With low self-esteem comes an unwillingness to initiate activities and with low resilience an unwillingness to engage in directed tasks. Sylvester notes that "offering ownership and therefore responsibility to participants is the key to enabling them to build self-confidence and self-esteem, and to act as a spur to developing communication and social skills." (p.100)

This article is very honest in citing all the areas for improvement in planning and practice. What it does illustrate, however, is how the physical setting of woodlands encourages a sense of exploration, of movement and risk taking that isn't possible in a classroom. When children have displayed in class behaviours of disaffection over many years, it is encouraging to witness how quickly some can be released from these behaviours simply by being outside, being allowed to explore, dig, run and climb. This experiences resonates and is illustrated by one 11 year old boy in my group who returned to digging with his hands each week, which he could do endlessly, laughing all the while.

Q7. Explain how Forest School nurtures a connection between participants and the woodland environment, using examples from your own practice

FS nurtures a connection to the woodland through prolonged exposure to it: over a period of time, participants become more accustomed to spending extended time outdoors whilst fears are allayed as time in the woods becomes normalised. As participants spend more time in the forest, they develop their identification of flora and fauna. Once they know what is there, they can build their understanding of the uses of plants and trees. I was surprised how keen my FS group were to work on their identification skills: they took great pride initially in remembering names of plants and then were pleasantly surprised at how many uses they had e.g. in cooking and medicines. As they began to be able to identify more elements of the habitats, so they better understood the linkages and interdependencies between species. This became clear during my FS sessions when the children wanted to use deadwood logs to build an obstacle course, discovering a host of insects and fungi underneath. This provided an opportunity to learn how even dead things are an important element in the food chains and ecosystems, which again surprised the children. It meant that they became more mindful of what they moved or used and were very good at the end of sessions of making sure to ‘leave no trace’. Connections are also built through physical interaction, as participants feel and experience nature ‘hands on’. This was shown in my sessions in particular through digging and tree climbing: during these activities, children learnt to identify deadwood and trees through bark, buds and flowers. Participants also keenly feel the impact of humans on the environment when they spend extended periods in it. In my sessions, children started to take ownership of rotation of tree climbing sites, rotation of digging sites, the need to leave dead wood and ground compaction and began to have their own ideas to address some of these issues. They began to see more the wider implications in terms of the damage human activity is having on the planet, but also how they can play a part in tackling this.



Appendices:

Forest School handbook for St. Stephen's C of E primary school- see separate document.

- **Appendix 1: Forest Schools sessions planning (Spring 2020)**
- **Appendix 1a : Forest Schools sessions planning (Autumn 2020)**
- **Appendix 2: Assessment of impact and development on 3 children in Forest Schools sessions.**
- **Appendix 3: Reflection diaries of FS sessions (Spring 2020)**
- **Appendix 3a: Reflection diaries of FS sessions (Autumn 2020)**
- **Appendix 4: Ecological impact assessment of Brookmill Nature Reserve**
- **Appendix 5: 3 year management plan of Brookmill Nature reserve**
- **Appendix 6 : Flora and fauna ID chart of Brookmill nature reserve as created by the children of my forest school group.**
- **Appendix 7: Outdoor paediatric first aid certificate**
- **Appendix 8: Staff evaluation forms**
- **Appendix 9: Plan and risk assessment for Forest School Assessment day 1 hour session.**