**Reflections on North West School 1 visit, 25th April, 2023**

**Environmental Geographer**

My first thoughts were all about how much easier the location was to reach from Cumbria. At the end of a very busy period of teaching, having an extra hour in the morning before leaving to pick Ian up *en route* was certainly something I was grateful for!

The drive down to North West school 1 was spent mainly catching up on the assorted bits of discussion that we so rarely get time for in the office. The drive to and from Manchester is always good for these types of discussions, and enables us to be clear on what has been done, but also provides chance to map out the day’s activities. Having run broadly similar activities with (City school), this all seemed familiar, although my hope was that we would extend the activities into actually calculating the carbon storage based on two Forest research approaches (one simple, one a bit more complex). I was worried however at whether 90 minutes (75 minutes in one case) was going to be too long for the three activities I had thought of. But also, conversely, I was concerned that we were trying to compress a lot of ideas: trees, carbon, measurement, tree twinning, into a very small space, with little opportunity for the children to actually build their understanding. At (city school) we had covered this in 3-4 separate afternoons with the same groups of children, and I was not sure whether the same is possible in one encounter. Also, with my ongoing covid- brain-fog, with new environments and lots of new children, there would be a lot of processing for my brain to do, and a lot of hearing and listening that my hearing loss and tinnitus would struggle to deal with.

The school looked fabulous, much bigger and more developed than I was expecting: it looked more like a secondary school from the front. I was a bit concerned that having never been to the school before I had no idea of the geography of the site, what trees there were, and just how we would manage the physical spaces. However, once through the reception and up to the classrooms where the three groups were, it was clear that North West 1 school is a great place to talk about trees. Trees at all different stages of their life cycle, readily accessible, and all broadly familiar (silver birches and sycamores in the main), but with a wider view to a landscape patchwork of different treescapes, not to mention the large Forest School area. This school has so much potential.

Having not met the children before, it was agreed that I would introduce the day and the team to each class, and this was perhaps the most nerve-racking part of the day, as the intro always sets the scene, and generates the atmosphere and dynamic. With groups of year 3/4 stage children, my overwhelming aim for the day was to enable the children to recognise that hugging trees is a great way to measure them, as well as building an emotional engagement with them for the children, and to introduce the idea that trees do a lot of work on our behalf, particularly storing carbon, which is important for keeping our planet safe and habitable. In planning the day, something I had taken from the work at (City secondary) was to focus on positive, hopeful ideas, rather than the dystopian narratives of climate crisis and emergency, so much of my framing focused on trees being superheroes, turning bad carbon into good. The children were clearly excited to be going outside, not least because the weather was good: nice and dry conditions, and sunny, if a little chilly to start off with.

There was a broadly similar pattern for each of the three encounters, although for each, the nature and dynamic of the group resulted in different emphases. Immediately I realised that I needed to have made more time to brief the project team with regards roles and activities: I knew what was planned, and (science team) had been able to discuss it in the car driving down, but I did feel that (education team) would have benefitted from a bit of preparation time and discussion before launching into the day. As a consequence, when splitting up each class into 6 groups and setting the children a task to talk about trees with the team member, I feel that this perhaps needed to be a little more pre-prepared. That said, it was a great opportunity to see how the children interacted with each team member, each other and the trees around them, picking up on different elements. When Artist joined us for the 2nd and 3rd classes, I think he had fun filming the children and the activities, but I regret not having the chance to explain the purpose of the session to him in advance. A missed opportunity on my part.

With (first) class, one of the children in my group chose quite early-on to start collecting all the dead twigs and branches, and pulling them all together. When I asked her what she was doing, and why, her response was ‘*I’m sad that bits of the tree keep falling off, and I don’t know how to put them back in the tree*’. Pretty profound, and I keep reflecting on that, because she distilled so many different ideas and emotions into that very simple sentence. Although, she did then say we could use them as a bonfire! I did use her initial comment to bring my group back into a discussion about why trees are amazing, and in every group that day, there was normally a comment about how trees fight climate change, and in numerous instances, children said that the trees breathe in carbon dioxide and breathe out oxygen. The children talked about the ages of the trees and thinking about tree rings and how each one represents a year, and I explained that we can estimate how old a tree is by holding hands and seeing how many of us were need to go round the tree trunk, with each person representing 100 years. They liked this way of dating trees.

After this breakout, all the groups came together and having usually drawn out that trees breathe in carbon dioxide, I started asking the children about carbon: what it was, where it could be found etc… I wish I had brought a few more props with me, such as a lump of coal, or a diamond (can the project budget extend to this?!), but hopefully the children gathered from the activity that carbon is in almost everything, including my fizzy water, and of course our own bodies. Then we tried to explore whether carbon is ‘good’ or ‘bad’. This part always felt a bit rushed, but it was good to have Ian and Education team acting as good and bad carbon, and the children enjoyed rushing between them, with some interesting discussions (especially with the middle group: Second class?) about whether carbon can be good and bad at the same time. This was quite sophisticated thinking, I thought. This activity was all about enabling the children to think of the role of trees in taking in and storing carbon. On reflection, I think this activity was a little too fast paced, especially with the afternoon group (Third?) and I could see that some children lost the concepts we were exploring. I also felt that it was too ‘teacher’ focused (i.e. me): in the classroom (City Primary) we are able to use presentation slides to structure the children working out the carbon story which is a little more child-focused, and I did not work out a good way to replicate this outdoors.

Finally, the ‘main’ activity was expected to be tree measuring, using the hug-a-tree method and measuring circumference and diameter of the tree, and in some cases getting the laser levels out to measure tree height. In practice, we mainly focused on measuring the tree circumference and using the simplest Forest Research ready-reckoner to estimate tree mass, and from that carbon. The children needed little encouragement to go off and hug trees, especially when telling the stories from Peter Wolleheben’s books that the trees sense and response the children hugging them. The idea that the trees could feel, smell and even hear the children was quite a revelation! It was good to explore ideas of diameter and circumference of trees, as these are things that the children have not yet studied in maths, but hopefully provide a real-world example of these measures, plus an application of how such measures can be used. In a few instances we did measure DBH and Tree Height, and I was able to estimate tree mass, volume and carbon using the more industry-standard methods implemented in Treezilla. What struck me was how different the estimates were of tree mass and carbon (order of magnitude differences), which illustrates just how important our toolkits will be in developing best-practice for children of different ages to measure carbon in their trees. Again, with this activity, I wish I had offered more guidance to the project team, as this section became a little *ad hoc*, with children doing all sorts of things. However, the important outcome was to enable the children to recognize that if we measure trees, we can work out how much carbon each tree contains. There were at least two of the classes where some of the children looked at the datasheet they were completing and saw that each of our carbon footprints is about 3.5 tonnes, and were trying to work out how many trees that meant they needed to plant.

On reflection, although things never quite go according to the plan you have in your head, I am moderately happy with the day. Being outside with the children was fun, different and exhausting, and having felt underprepared for the session in terms of having sufficient content for the time available; actually, I was completely over-ambitious, and we had to rush to finish within the time available. We had to compress a lot of ideas into one encounter, and I struggled a bit with keeping the tempo of activities at the right level. Sometimes the children became more engrossed with the voice recorders and iPads; in the final class there were a group that were crowding me like paparazzi, which was funny, but also a little unsettling. The end of the final session had to be revised, as most of the other team members had gone inside to watch the film that Artist had previously produced, and we had to do the final debrief back in the classroom, which was a little unfortunate, as by the time the teacher had organised the children back in class, a lot of the ‘moment’ had passed.

Whilst we never fully completed any of the activities, I think that it was the process of the play and activities themselves that mattered: I think almost all the children picked up the ideas of trees, carbon and climate, even if they didn’t all get the chance to fully develop their thinking. There wasn’t really the time to enable that reflection to occur. It was great to see children running around, hugging the trees, playing with the technology. As is always the case, there are never enough tools (laser scanners, dbh tapes etc..) or enough expertise (i.e. enough team members to help the children use the equipment) to full realise the ambitions of the day. My chief regret is not spending the time briefing the team colleagues of the plans, and getting the thoughts of The Education team more incorporated into the activity. I think this was necessary to get everyone in the mindset of how the three activities build towards an understanding of the role that trees play in balancing our own carbon. This lack of a briefing was entirely my responsibility, but time pressures in my teaching programme at the University had significantly impacted my capacity to plan properly in advance. As such, it may have felt like a chaotic space, but… by the end of each session, the children had learned a lot about how to value (and measure) ‘their’ trees.

If I had the chance to plan and run this again, I think I would have spent the first activity a little more passively, encouraging the children to sit down or lie down beneath, or to hug the trees for about 3-4 minutes (i.e. the time it takes for the tree to ‘sense’ that the children are there). This would offer a chance to ground the children before all the running around: this also might have provided the other team members chance to explore ideas of connections with trees, before leaping into the carbon science. A bit more thought over the carbon activity (for example developing a teacher resource and lesson plan about carbon for the children to do before the encounter) and making more time for the children to measure the trees would have helped, but I am conscious that 90 minutes is a long time to keep children engaged on one set of activities, without giving breaks.

*Environmental Geographer: 3rd May, 2023*