STEM Clubs Climate Change Project case study: Woodfarm High School

12 students from Woodfarm High School in Glasgow took part in STEM Learning and the British Council's recent Climate Change project. It involved working together with a school in Brazil to investigate and compare the impact of climate change in their countries. Mr Murray, Principal Teacher of STEM at Woodfarm, tells us more about the project and its impact.

What motivated you and the school to take part in the Climate Change project?

Coming from [a background in] STEM industry myself I fully believe ANY pupil can have a very successful career in STEM. I strive to raise the ambition of my pupils, to push them to step outside their comfort zone and aspire to experience STEM beyond the curriculum.

The chance to become involved in the Brazil project immediately gained my attention as an opportunity to broaden STEM engagement for our pupils, to realise the context of the effects of climate change in the wake of COP26, and more importantly to further connect our network of STEM partners and peers for long-term engagement for generations of pupils at Woodfarm.

What did the Climate Change project involve?

The climate change project involved examining Met Office data of precipitation in an area of the UK and also a comparative area of Brazil. Pupils had then to draw comparisons between both countries, looking at historical reasons why changes occurred, predicting future events as well as considering mitigations to address this element of the climate crisis.

Following their Initial involvement with the STEM Learning network Brazil project, we have now begun to extend our partnership with Honorina de Carvalho Municipal School in Brazil, where pupils will work remotely with their peers on a similar architecture project focusing on sustainability and environmental impact.

How did this project impact your students' research and communication skills?

The project was fantastic in terms of pupils developing skills in research and investigation and also in communicating with peers in Brazil. Despite the language barrier and connectivity issues pupils relished the chance of simply meeting Brazilian pupils virtually. We were able to discuss local historical instances of things like flooding and sea rise, which was different in comparison to the Met Office data supplied (pupils looked at precipitation and flooding local to west central Scotland as well as south east England).

"I thought that the Brazil Project was one of the most interesting projects I could have taken part in. It has given me knowledge about our planet, priorities and the environmental climate crisis. I felt really lucky to be asked to take part and excited that we can continue working with pupils from Rio."

Student

How did this project impact your students' perceptions and knowledge of climate change?

Pupils are now far more aware of a globalised climate emergency. The testament of their peers in Brazil, given common age and dynamic, has helped to contextualise the similarity of their own lives, futures, and climate-related problems which they will have to face together. This has helped students to input themselves into the content of our partnership moving forward: their next continued-partnership project will focus on 'eco-

architecture' and sustainability in the construction industry, and also another project looking at electricity and hydrogen being used as power sources for transportation.

How did this project impact you and your students' perceptions of education in Brazil?

Pupils were initially surprised by the positive attitude towards English language education and the engagement with the school's STEM club. They were also surprised to hear of the limited range of subjects available in the school. They are very keen to continue working with their peers in Brazil on leading their own STEM learning in the future.

What do you aim to get out of a continued relationship with the school in Brazil?

Our initial intention is to assist the teacher delivering STEM with content and projects to further inspire and connect his pupils to ours. [We intend] to extend the experience of our pupils' international citizenship by encouraging peer-to-peer teaching in language as well as STEM – it is only respectful if our pupils make an effort to communicate in Portuguese as much as the Brazilian pupils in English.

In addition, we are embarking on a further four collaborative partnerships across other curriculum areas involving art, English literature and physical education. The success of these continued, and extended, initiatives is a benchmark both myself and [the Brazilian teacher] have agreed upon which we are hoping leads to the 'twinning' of both schools. This would provide a formality and foundation to work together across all curriculum areas in the future.

As a school, and local authority, we are hugely inspired and proud of the remarkable work undertaken during this project by our Principal Teacher of STEM, Mr Murray, and all pupils involved. We are also very grateful for the efforts and collaboration of the teachers in Brazil who have dedicated much of their own time to this endeavour. The project has gained significant interest from our school community and significantly risen our profile as a STEM provider creating a range of activities and partnerships out-with the norm. We continue to follow developments with keen interest.

Senior leadership, Woodfarm High School

Our partnership with Brazil has attracted further interest from our existing industry partners from the Industrial Cadet programme and pupils have taken part in virtual talks, presentations and visits to highlight the fast changing face of STEM industry, careers and further education opportunities. This has breathed new life into the school and raised our profile as a pioneering STEM provider.

What advice would you give to other schools who are considering expanding their STEM enrichment offer?

The STEM enrichment offer has truly been the most memorable experience for our pupils, but also has been the most exciting opportunity I have personally experienced in my long career. I'd say our partnership has really been successful as a result of the careful pairing of lead teachers. [The Brazilian teacher] and I are very similar in our teaching approaches and our passion for providing extra-curricular provision for our pupils. We see real value in connecting pupils internationally and in providing once in a lifetime opportunity to build friendships where pupils can compare their education and lifestyles. This simply adds value and integrity to the STEM content we teach them and true relevance to the possibility of future career pathways in STEM.

"The Brazil/UK STEM project has been a truly fabulous initiative which has risen the profile of STEM within our school and encouraged collaborative working between departments and pupils alike"

Headteacher, Woodfarm High School