**The Bromstone Experience**

**The 'Discovery Bags' Project**

The students at Bromstone Primary School took part in our Discovery Bags Project. Primary school students received a small bag of simple equipment each. It means they can all experience "thinking like a scientist" while observing water droplets falling onto a coin.

The video explains that students were introduced to the Discipline Wheel to help them to connect and situate science to the multidisciplinary arena of disciplines they study at school. Working in groups, students investigated, '"Why did the Titanic sink?". It's an opportunity to experience 'thinking like a historian' and 'thinking like a scientist' about the same question.

Headteacher, Amanda Dissington and two LASAR Research Fellows (Sherry Simpson and Finn Lawson) created a conference presentation about how their collaboration worked. Here is the abstract:

**Epistemically insightful whole school curriculum: equipping primary students with an understanding of the nature of knowledge.**

This presentation shares how an English primary school, working within a catchment area where students are traditionally underrepresented in HE, has undertaken extensive curriculum and pedagogical re-design following engagement with co-created research interventions. Working in partnership with a university research centre the school and research team are co-creating and evaluating pedagogies and systems to transform students’ experiences of scientific and other forms of knowledge in and beyond the curriculum.

There is a widely acknowledged need for more effective strategies to encourage young people to pursue STEM-related studies, particularly those who are under-represented within STEM. Students from “economically disadvantaged backgrounds” are said to have poorer science attainment than their more advantaged peers, with the divide appearing as early age 5-7 years (ASE, 2018), and continuing through to GCSE choices where they are three times less likely to take triple science at GCSE level (Archer et al., 2016, p. 302). These and other findings highlight that the pedagogy widely used in schools today of prioritising de-contextualised learning creates passive learners and privileges students who are already primed by their home settings to learn. This is an issue across educational institutions and international contexts where learning is delivered in a compartmentalised manner (see Billingsley et. al., 2018).

Through our shared enthusiasm to embed a whole-school approach of teaching about Big Questions, and how disciplines work we have moved from a topic-based or thematic approach to curriculum to one that embeds epistemic insight pedagogy across the school to equip our students with an understanding of the distinctive contributions of and interactions between disciplines in addressing Big Questions. We have moved to a model in which within any short term the whole school is examining answers to the same “Big Question” such as “Why do rights exist?” or “What makes our environment special” through stage appropriate “smaller” questions in each year group.  Through the introduction of tools such as the discipline wheel, and physical prompts like disciplinary glasses (lenses) students in every key stage are empowered to think about the richness of knowledge creation and not simple view their learning in isolated silos.  Whilst initially born out of a STEM intervention during the pandemic to enrich students’ understanding of the nature of science, the creation of epistemically insightful learning activities at the heart of our curriculum is having a whole school, and cross curricula impact on students’ learning and engagement.