Aim

To support primary schools to review Science curriculum knowledge linking to scientific enquiry to prepare students to be successful at KS3.

Outcomes

- Primary schools have a firm understanding of KS3 scientific enquiry skills across Biology/Chemistry/Physics.
- Via CPD, in-school visits and online support, primary schools are provided with subject knowledge support linked to scientific enquiry with a particular focus on Physics.
- Relationships between primary and secondary schools strengthened to share physical equipment where required.

Background

- It is estimated that just 5% of primary teachers have a science degree and many primary teachers have been shown to have the same scientific misconceptions as the children they teach (STEM Learning).
- As a result, many primary teachers do not feel confident in their science teaching.
- Primary schools do not always have access to the practical equipment needed to develop scientific enquiry.

When arriving at secondary school:

- Some students often arrive with a diverse range of exposure to and knowledge of the Science National Curriculum.
- Students have limited experience of using equipment during scientific enquiry.
- Students often have common misconceptions relating to scientific literacy.
- Students often have limited experience of how to record data in an appropriate form.

Proposal

- All primary school science leads complete curriculum audit via Gatekeeping and respond to the following questions:
    - Who has responsibility for overseeing the science curriculum in your school?
    - What proportion of your Science curriculum time is allocated to scientific enquiry?
    - What are the barriers to scientific enquiry in your school?
    - How do you measure student progress in scientific enquiry?
    - Which of the following CPD would your school be interested in attending?
        - ❖ Subject knowledge workshops (Biology/Chemistry/Physics)
        - ❖ Setting success criteria for practical work
        - ❖ Workshop run by subject specialist on how to deliver Biology/Chemistry/Physics practical lessons.
        - ❖ Observing scientific enquiry at secondary school
        - ❖ Other – please specify
    - What are the current challenges in your Science curriculum?
    - What would you like to find out more about?

- Based on the outcomes of the audit, identify CPD sessions to run for primary school teachers online in the autumn term.
- Paired development session. Based on the outcomes of the audit, pair primary schools with appointed local secondary school experts.
- Secondary school lead to visit primary schools to provide bespoke support and training.
- Post visit, primary schools to identify how they will modify their curriculum as a result of training received and outline the steps to achieve this. Visit pro forma to be provided.
- Meeting (online or in person) in Spring Term 1 between participating primary and secondary schools to discuss progress and identify need for additional CPD. Meeting pro forma to be provided to support primary schools to identify and plan next steps.

- Additional CPD/support delivered by secondary leads to primary schools as required in Spring term/Summer term 1.
- Meeting (online or in person) in summer term 2 to give primary schools the opportunity to work with secondary leads to obtain feedback on their adapted curriculum. Meeting evaluation form to be provided to support primary schools to identify and plan next steps for following academic year.

Monitoring impact

- Primary school initial audit
- Evaluation forms
- Meeting pro forma and feedback forms
- Primary school science leads ensure that the curriculum progresses into secondary with key areas addressed
- Stronger relationships between primary and secondary science departments
- Increased scientific enquiry skills at the start of KS3
- Increased confidence of KS2 science curriculum deliverers