

Module 1: Introduction

Presenter notes

This presentation is designed to provide a background and introduction to the Gatsby-funded ASE project supporting the development of effective policies in schools relating to practical work. Unlike the six aspects of the suite of resources (see Slide 4), its role is less one of being interactive and developmental and more one of providing a background to the project. It introduces the project, its aims, structure and intended outcomes.

The session is designed to take around 35 minutes to run, though in practice this will vary according to the degree of familiarity that participants have with the aims, format and content of the project.

Materials needed

There is no particular need for participants to have copies of the presentation if they have the *Background to the project* document.

- *Background to the project* document
- Data collection sheet
- Apparatus and techniques summary
- Typical Key Stage 3 (ages 11-14) practical activities.

References

- *Good Practical Science*, The Gatsby Charitable Foundation (2017): www.gatsby.org.uk/GoodPracticalScience
- *Getting practical – a framework for practical science in schools*, ASE and partner organisations: www.gettingpractical.org.uk/index.php
- *Practical Work in Science*, SCORE: www.score-education.org/policy-themes/curriculum/practical-work-in-science
- National Strategies materials on 'How Science Works': www.stem.org.uk/elibrary/resource/31705
- *Assessing Pupils' Progress (APP) in Science*, QCA: www.stem.org.uk/resources/elibrary/resource/29133/assessing-pupils-progress-app-science-materials
- Nuffield Foundation practical science websites:
 - ❑ Practical Biology: www.nuffieldfoundation.org/practical-biology
 - ❑ Practical Chemistry: www.rsc.org/learn-chemistry/resource/listing?searchtext=&fcategory=all&filter=all&reference=nuffpract&Keyword=KCN00000009
 - ❑ Practical Physics: www.practicalphysics.org/

Outcomes

The outcomes of this session are to:

- Introduce key personnel
- Outline the scope and scale of the project
- Clarify expectations
- Introduce resources and their purposes.

Slides

Slide 1 (10 minutes). Before commencing this session, please ask schools to complete the data collection and self-assessment sheet.

Slide 2 (3 minutes). This slide explains the role of a pilot school in this programme. This will have been communicated to schools beforehand, but use this opportunity to reinforce this and to deal with any questions.

Slide 3 (3 minutes). This relates to one of the diagrams in the *Background to the project* document.

The purpose is to draw out that, although schools tend to be very conscious of the exam board requirements, this isn't the only influence. An example of this is as follows: some teachers tend to be of the view that a prime function of practical work is to illustrate key ideas (one explains the concept and then illustrates it using a practical activity). Other teachers are more enthusiastic about practical work being investigative, with students exploring phenomena and suggesting explanations. These views are likely to influence the way in which experiments are designed and run, especially those not on the list of required practicals for GCSE. Inputs from various agencies have influenced practice over the years; several of these are referenced in the presenter notes. These various influences are worth considering as they are likely to have a bearing on how practical activities are planned, run and evaluated by various teachers.

Slide 4 (3 minutes). This slide is important, as it explains the structure of the materials. There are several points worth making:

- The various components are listed; departments need to decide upon which of these to spend time and which will be a better investment of their attention. There is no expectation that everybody uses everything.
- Similarly, a subject team might want to approach the development of a policy in different ways. These components shouldn't preclude other considerations.
- The order can be changed and shouldn't be regarded as immutable.

Slide 5 (3 minutes). Some teachers may have a view that a policy is simply a document that has to exist for compliance purposes. This slide emphasises the key point that what is crucially important is what happens in the classroom. A document that bears no relationship to this can be considered worthless. What schools undertaking this project are expected to do is to consider what their actual practice is and should be. This doesn't mean that the written policy is irrelevant; there should be a close relationship. The policy should be the way in which practice is established, clarified and reviewed.

Emphasise as well that the policy (and therefore practice) needs to be reconciled with a number of other factors. Also explore the idea that there has to be a process for revisiting a policy and that establishing this has to be part of the development as well.

Slide 6 (3 minutes). This draws attention to the five purposes of practical science as identified in the *Good Practical Science* report. A hard copy of this went into all schools; it is also available online at www.gatsby.org.uk/GoodPracticalScience

Emphasise that this project is synchronised with these. It is worthwhile pointing out that the materials tend to draw more strongly on the first three purposes in explicit terms. However, it shouldn't be assumed that the other two are deemed insignificant and schools are encouraged to develop policy and practice to support all five.

Slide 7 (3 minutes). It is appropriate at this stage to refer to two of the other resources. Although they aren't being used at this stage, it helps to address any misconceptions.

The apparatus and techniques summary is a précis of the key components of the new GCSE specifications. It is worthwhile explaining that this project isn't primarily intended as a way for schools to maximise the marks that their students get for exam questions assessing practical skills. However, schools participating in this project and developing more effective policies in relation to practical work will be strengthening their practice in the longer term, and this should lead to a range of benefits in relation to student outcomes in a range of areas.

The typical Key Stage 3 experiments sheet is simply a list of the kinds of investigations that a school might get students to do in at this key stage. It is not intended that participating schools should do all of these, or that they shouldn't do anything that doesn't appear on the list. The document is simply a way of providing a number of examples, which make some of the CPD activities easier to complete. There are also documents designed to make it easier to capture aspects of the project to support the writing of case studies by the project team.