



executive summary

Assessing Pupils' Progress (APP) in key stage 3 science

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This is the final report on the uptake and implementation of Assessing Pupils' Progress (APP) in key stage 3 science, following its introduction in January 2009.

Policy context

The Government are currently investing £150 million over three years (2008–2011) in order to help schools in England to take a strategic approach to assessment, with the aim of securing consistent best practice. APP forms part of this strategic approach. The government sees APP as a way of reliably linking National Curriculum levels to effective classroom assessment following the principles of Assessment for Learning (AfL). Nichol (2007) gives a useful summary of the main points of AfL. Good assessment practice should:

- put the learner at the heart of the assessment process
- help to clarify what good performance is and enable learners to recognise achievement
- deliver high quality feedback information that help learners to make progress
- help teachers to shape and adapt their teaching to suit the learners' needs.

(Adapted from Nichol, 2007, p.3)



APP, science and assessment

The previous Programme of Study (PoS), introduced in 1999, was content-based and viewed by some science specialists as too prescriptive. While this was considered beneficial by some, it was felt the prescriptive nature limited the flexibility to teach science in the classroom. In order to rectify this, a new PoS was introduced in September 2008, to be taught to the new year 7 intake from that year onwards. The new PoS in science aims to provide:

- a curriculum which is broader and more relevant to pupils at key stage 3
- a better balance between content and scientific processes or How Science Works (HSW)
- less prescriptive range and content statements
- greater flexibility for teachers.

The intention of the new PoS is that the theories that underpin the study of science and HSW should be taught through the key concepts and key processes it sets out. This is where the link to APP becomes obvious as these two areas are skills based, and APP is intended to support their assessment, and ultimately their development. Some believe that the more opportunities there are for HSW, the more opportunities there will be to gather the evidence for APP (Harden, 2009).

APP is a new approach to assessment as it focuses on skills rather than being content driven. It aims to provide a structured approach to teachers' periodic assessments in science. The range and content sections of the PoS are not explicitly assessed through APP. However, the Framework (with strands of development that describe progression in learning and set out a minimum expectation for the progression in learning of most pupils) for science suggests that the range and content sections of the new PoS should be treated as contexts for developing knowledge, skills and understanding of HSW (and therefore APP), in addition to defining the knowledge to be acquired.

Aim

The overall aim of this research project was to look at the uptake and implementation of APP in key stage 3 science following its introduction in January 2009. The findings from this project will provide science specialists with an overall picture of the current assessment context and identify areas where further support is needed.

The project had three components.

- 1 A brief review of the policy context in which APP is being introduced.
- 2 The results of two questionnaires sent to all local authority (LA) secondary science consultants in England: one in May 2009 and one in September 2009.
- 3 A review of support materials and resources available for supporting APP in science at key stage 3.

This report documents the conclusions and recommendations as a result of the two online questionnaires which were 'live' in May 2009 and September 2009.

*Trust in teachers'
professionalism.
(LA consultant)*

Research methods

LA secondary science consultants were surveyed, as they are at the forefront of the implementation of APP in science at key stage 3.

Questionnaire 1 consisted of 20 questions. Following respondents' completion of questionnaire 1 and its analysis, questionnaire 2 was developed. Questionnaire 2 consisted of 26 questions.

The majority of the questions in the questionnaire were open response (qualitative). This gave respondents the opportunity to respond in their own words rather than in a pre-determined structure. In order to group similar responses and make it easier to draw valid conclusions, many of the open-response questions were coded.

For both questionnaires, all of the 150 LAs in England were asked if they could supply contact details for their secondary science consultants. All those LA science consultants for whom email addresses were obtained were sent by email a link to the online questionnaire, along with log in details and a password. Science consultants, whose LAs did not provide email addresses, were sent the same email, but it was sent to the NFER link person in each LA with the view they would forward the email to the appropriate person. The same procedure was followed for the second questionnaire in September 2009.

The target for completion of the questionnaires was 50 consultants from 150 LAs (33 per cent of total LAs).

Table 1 Number and percentages of completed questionnaires

	Achieved		
	Number	Percentage of target (%)	Percentage of all LAs (%)
Questionnaire 1	57	114	38
Questionnaire 2	47	94	31

In total, 28 LA science consultants completed both questionnaire 1 and questionnaire 2.

Findings and recommendations

On balance, positive responses towards APP outweighed negative ones, and this general feeling remained the same between questionnaire 1 (May 2009)

Help teachers feel more confident about assigning levels to pupils as part of everyday teaching and learning.
(LA consultant)

to questionnaire 2 (September 2009). The LA science consultants believed that APP in key stage 3 science will make a positive contribution to teaching and learning in science.

The majority (64 per cent in questionnaire 2, 61 per cent in questionnaire 1) said the response from teachers had also been positive. Despite this, 31 per cent of respondents from questionnaire 2 and 27 per cent from questionnaire 1, identified some concerns. Such comments as 'good idea but complex to implement properly' and 'very positive amongst vast majority of teachers although still some concerns about the process' typified these responses.

Of the schools the LA science consultants work with, the majority were reported as incorporating APP into their teaching of key stage 3 science. However, this may not be a fully representative finding as the LA consultants who responded to the questionnaire may be supportive of APP and may also have encouraged more of the schools in their LA to take up the programme. Those schools not opting in did so because they felt their current assessment systems were adequate – given that APP is non-statutory, this should not be surprising.

In order to for this section to be clearer it has been divided up into four areas:

- implications for science
- assessment
- manageability
- support.

Implications for science

As a result of the introduction of the new key stage 3 PoS in 2008, the science National Curriculum has been streamlined and has become more focused on developing pupils' skills through HSW. APP positively supports the development of HSW at key stage 3. LA consultants also believed that teachers now have greater creativity in how they teach science, which has the potential to have a positive impact on pupils as this should encourage greater engagement and motivation.

Despite the positives related to the implementation of APP in key stage 3 science there are a few reasons for caution. Firstly, APP is non-statutory. Potentially this could make the profile of APP lower, eventually leading to it being of a low priority in schools and not being fully utilised to assess pupils. Secondly, and more generally, the abolition of key stage 2 and key stage 3 science National Curriculum tests may result in science have a lower priority in schools overall. This report recommends continuing to:

- actively promote APP in key stage 3 science, focusing on the link between using APP for assessment and HSW
- highlight the importance of science.

APP 'improves teachers' understanding of HSW'
(LA consultant)

Assessment

APP has a number of positives in relation to assessment. Most notable of these is the way APP can be seen to support teacher's classroom assessment in a structured manner. This contributes to the re-professionalisation of teachers in terms of putting the trust back into their professional judgement, and increases their confidence. APP also supports teaching and learning by promoting AfL in the classroom, providing feedback to pupils and information regarding the next steps in their learning, as well as providing a consistent use of language amongst teachers and pupils.

*It is a useful tool to support AfL practice particularly related to pupil feedback and setting of curriculum targets.
(LA consultant)*

Overall, a large number of consultants who completed the questionnaires said it was too early to comment on whether APP was being used as envisaged. However, in those schools using APP it was not being influenced by day-to-day practice. Concerns were raised about APP becoming a 'bolt-on' assessment rather than embedded within current practices. Potential reasons for these concerns were teachers having a lack of understanding of APP and AfL approaches and problems related to the APP criteria, which included there being too many statements and the statements being overly complicated or too vague. This report recommends:

- more guidance and examples of how to gather evidence from day-to-day assessment, which can then be used to inform periodic assessment
- making it clearer that APP, whilst central, is not the only means of assessment and it can be used in conjunction with more traditional forms of summative assessment, such as tests
- more examples of pupils' work which has been levelled, moderated and has examples of the feedback which could be given to pupils
- more examples of level 7 and level 8 pupils' work which has been assessed using APP
- guidance on how to record pupil attainment efficiently.

Manageability

The manageability of APP is possibly the largest area of concern highlighted by the LA science consultants and the teachers they work with. It would seem the more support there is in schools from senior leadership teams (SLTs), the easier the implementation of APP can be. If SLTs are 'on board' with the principles of APP, then sufficient time to train teachers and for teachers to develop resources is made available. In those schools where this is not the case, the introduction of APP has the potential to be seen as an increase in teacher workload.

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Concerns regarding recording and monitoring pupils' progress were raised in the questionnaires. It is clear that using APP will provide a wealth of information about individual pupils. However, the amount of information has the potential to feel overwhelming and unmanageable. This report recommends:

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- more information for SLTs so they have an even clearer understanding and appreciation of APP in their schools
 - SLTs set aside time within school timetables, say, once a term, specifically for moderation.

Support

Most LA consultants are supporting schools with the initial implementation of APP by having meetings with the heads of science and running training sessions for whole science departments.

In terms of support for the moderation of pupils' work assessed using APP this is yet to be fully established. This is due to the implementation of APP being in its early stages and due to time limitations. LA consultants are promoting inter-department moderation and network groups amongst schools within LAs. The consultants who responded to the questionnaires did raise concerns about whether there would be external moderation of pupils' work and what form this would take. This report recommends:

- in schools where APP is being used, sufficient time be made available for teachers to understand the APP criteria, evaluate current practices in light of APP, develop existing schemes of learning and practice assessment using APP
- an online community for teachers using APP to share good moderation practice.

Future research agenda

Further research is needed in order to see the true impact and implications of APP in key stage 3 science. In particular, studies of the following kinds could provide valuable further evidence:

- Secondary science teacher questionnaire – this is a natural progression after collecting the views of LA secondary science consultants. The questionnaires used in this research provided information about the implementation of APP in key stage 3 science. A teacher questionnaire would provide information concerning the use of APP in practice. The NFER suggests sending a questionnaire (paper based or online) to all key stage 3 science teachers in England.
- A project investigating the implementation of APP in primary science – this could be conducted in a similar way as this piece of research.

Further research is needed in order to see the true impact and implications of APP in key stage 3 science

References

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Nichol, D. (2007). 'Principles of good assessment and feedback: theory and practice', Keynote Paper, University of Strathclyde, 1–9.



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