The Teacher Assessment in Primary Science (TAPS) school self-evaluation tool

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January 2017
INTRODUCING THE TAPS PYRAMID MODEL

The Teacher Assessment in Primary Science (TAPS) project is based at Bath Spa University and funded by the Primary Science Teaching Trust (PSTT). TAPS aims to develop support for valid, reliable and manageable assessment, which will have a positive impact on children’s learning.

Background

Wynne Harlen and colleagues (Harlen et al., 2012; funded by the Nuffield Foundation) recommended that the rich formative assessment data collected by teachers in the course of ongoing classroom work in science should also be made to serve summative reporting purposes. They developed a pyramid model where assessment information flowed from classroom practice to whole school reporting. This flow of information is represented by the ORANGE ARROW on the TAPS pyramid.

The TAPS team examined submissions to the Primary Science Quality Mark (Earle, 2014) and practice in 12 project schools to understand current approaches to assessment in primary science (Davies et al., 2014).

The TAPS team worked with local project schools, the Primary Science Quality Mark and PSTT College Fellows to create the model of teacher assessment and populate it with examples.

The TAPS pyramid provides a framework to support science subject leaders in identifying strengths and areas for development in school assessment systems. The suggestions in each box aim to strengthen the validity, reliability and manageability of assessment in primary science.

The Ongoing Formative Assessment can be summarised for different reporting purposes.

The base of the pyramid encapsulates the principles of assessment for learning.

Recommendations for where to start

The blue ‘Pupil layer’ and ‘Teacher layer’ at the base of the pyramid encapsulate the principles of Assessment for Learning. They include boxes which focus on clear learning objectives or success criteria; use of questioning, feedback and next steps; peer and self assessment. Schools should begin by focusing on these layers since this is not only the foundation of the whole system, it is also where changes will have the most impact on pupil progress in primary science.

Using the school self-evaluation tool

The downloadable TAPS pyramid pdf is available at: www.pstt.org.uk/resources/curriculum-materials/assessment

It provides a supportive bank of examples, which can be found by clicking on each box. The pyramid can also provide a structure to support school self evaluation. The interactive functions allow you to traffic light your assessment systems (on your own saved copy) and make notes on the approaches in your school. If you prefer to do this on paper then a black and white pyramid for printing is also available on the PSTT website.

References


USING THE SCHOOL SELF-EVALUATION TOOL

http://tinyurl.com/pyramidintro
Science assessment: school self-evaluation tool

1. **ONGOING FORMATIVE ASSESSMENT**
   - Produced by the Teacher Assessment in Primary Science Project, Bath Spa University, developed from Harlen et al., (2012).

2. **MONITORING OF PUPIL PROGRESS**
   - Teachers summarise achievements in terms of what pupils can do, not only in terms of levels, grades or %.
   - Parents/carers receive oral and written reports that identify the next steps for their children.
   - Summaries of pupil progress across the cohort draw on a range of information.

3. **SUMMATIVE REPORTING**
   - Science assessment processes provide a valid and reliable summary of pupil achievement at the end of Key Stages.

4. **WHOLE-SCHOOL REPORTING**
   - FEEDBACK FROM DIALOGUE WITH SCHOOL
     - Leadership, Governors and Parents informs changes to science assessment.
   - FEEDBACK FROM TEACHER-PUPIL/PARENT CONFERENCES
     - Include dialogue on attainment in science.

5. **DESCRIPTION OF ASSESSMENT PROCESS**
   - Teachers use assessment to advance pupils' learning by acting on feedback.
   - Teachers use assessment to advance pupils' learning by giving feedback to students about how to improve.
   - Teachers use assessment to advance pupils' learning by providing time for students to reflect on and assess their own work.
   - Teachers base their summative judgements of pupils' learning on a range of types of activity.

6. **PROPERTY OF PLAN**
   - Teachers plan opportunities to elicit pupils' science knowledge and skills.
   - Teachers involve pupils in discussing learning objectives and criteria for success.
   - Teachers gather evidence of their pupils' learning through questioning/discussion and observation.
   - Teachers gather evidence of their pupils' learning through study of the products of activities and tasks.

7. **PRODUCT OF RECORD**
   - Teachers use assessment to advance pupils' learning by adapting the pace, challenge and content of activities.
   - Teachers use assessment to advance pupils' learning by giving feedback to students about how to improve.
   - Teachers use assessment to advance pupils' learning by providing time for students to reflect on and assess their own work.

8. **INFORMATION FLOW**
   - Direction of information flow through school: Feedback from dialogue with school, leadership, governors and parents informs changes to science assessment.
   - Teachers reflected in school feedback flow.
Examples of good practice

RETURNING TO A TASK

In a KWL grid pupils are asked to consider what they already Know about a topic and what they Want to find out. At a later date, return to the grid to consider what they have Learnt.

Returning to a task can happen with any activity: a pupil completes an activity, the teacher gives feedback and the pupil has another go. For example, at St Paul’s Primary, when labelling falling objects, a pupil had first drawn arrows around the world. After discussion with the teacher, the pupil then drew new arrows towards the centre of the Earth. These particular examples come from Active Assessment: www.millgatehouse.co.uk/product/active-assessment-science

SHARED UNDERSTANDING

Holt Primary have developed a science skills toolkit. This is a picture based success criteria for KS1 Working Scientifically which can be used by both pupils and teachers.

At Shaw Primary, science ‘stars’ are displayed in the classroom showing key features of progression in enquiry. The science stars are also embedded in the planning which details success criteria for the sequence of lessons.

At Victoria Park Primary have developed a Working Scientifically butterfly to help focus and coverage of skills.

PRE AND POST ASSESSMENTS

Eliciting the children’s ideas at the beginning and end of a topic helps teachers to pitch the lessons, and also clearly demonstrates progress. For example, at the beginning of a unit on plants, a year 3 child’s thought shower described factors which affect plant growth; by the end of the unit the same child described photosynthesis and reproduction. In a year 1 group discussion about animals, at the beginning of the topic the children knew little about amphibians or invertebrates. By the end of the unit, the children could name animals in these groups and describe some of their features.

MODERATION GRAFFITI WALL

Moderation discussions, in year groups, schools and clusters, support consistency of expectations and judgements. At Worlebury St Paul’s Primary, a staff meeting addressed concerns about explicit teaching of Working Scientifically. The staff were asked to bring examples of enquiry work from each year group and lay these along a roll of paper. This enabled teachers to discuss skills progression and development of independence in investigations. Judgements regarding attainment were discussed in relation to statements in the National Curriculum. Staff created a moderation graffiti wall to consider progression from Y1 to Y6.

RECORDING DISCUSSION IN FLOOR BOOKS

A floor book is a homemade book which provides a record of a discussion. Older children may write on post-its or in different coloured pens, whilst for younger children an adult would scribe the children’s comments. The discussion could be in response to a stimulus, for example, at Oaktree Primary, how can we make jelly change? The group or class book creates a record of how the children’s ideas have developed. For further information on how to use floor books go to: www.pstt.org.uk/resources/continuing-professional-development/floorbooks.aspx

For further information on the new focused assessment database of plans and examples go to: www.pstt.org.uk/resources/curriculum-materials/assessment

If you would like to offer further examples or provide the TAPS team with feedback, please email: primary.science@bathspa.ac.uk

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