

Assessment for Learning in science

Unit 2a: Developing oral feedback in science



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How the science Assessment for Learning units fit together

Structuring learning to develop
Quality First teaching



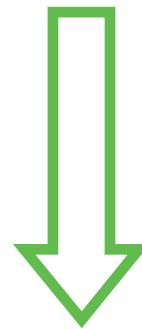
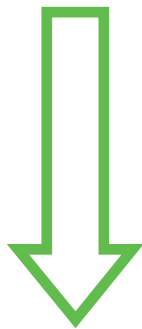
CORE

Unit 1 Lesson scaffolding

Supporting structured learning through:

- learning objectives
- learning outcomes
- success criteria

NEXT STEPS



Unit 2a Oral feedback

Recognising learning
Celebrating learning
Highlighting
next steps in learning
Developing
independent learners



Unit 2b Written feedback

Recognising learning
Celebrating learning
Highlighting
next steps in learning
Developing
independent learners



Unit 3 Peer and self-assessment

Recognising learning
Celebrating learning
Highlighting
next steps in learning
Developing
independent learners

Unit 2a: Developing oral feedback in science

This is the second unit in a series of support materials to strengthen Assessment for Learning (AfL) in science. These materials link closely with the following quality standards developed for AfL.

AfL quality standards

- 2.1. All teachers have a secure and shared understanding of AfL and how it impacts on learning and standards.
- 2.3. All teachers give pupils clear feedback which identifies next steps and provides opportunities in lessons for pupils to discuss and act upon the feedback.

Purpose of these materials

- To highlight how effective oral feedback develops pupils' learning
- To consider a range of strategies for giving effective oral feedback that can be both formal and informal
- To help teachers plan for giving effective oral feedback
- To help schools develop a whole-school policy clarifying the relationship between oral and written feedback
- To help teachers plan to give oral feedback to improve pupil progress in *How Science Works (HSW)*

Reference material

All materials referred to are listed at the end of this document and are available to download from www.standards.dcsf.gov.uk/nationalstrategies.

Key messages

- Oral feedback is the most regular and interactive form of feedback. It should be constructive and informative in order to help pupils take the next steps in their learning or progression with *HSW* skills.
- It is both direct (targeted to individuals or groups) and indirect (others listen and reflect on what has been said). At times it will be spontaneous and at times it should be structured and planned.
- In offering oral feedback, the teacher is modelling the process and language that pupils can use in giving feedback to their teacher and peers.
- Oral feedback should be developmental, and offer specific details of ways forward in relation to the shared learning objectives, learning outcomes and success criteria.
- 'Wait-time' before and after questions or responses encourages pupils to consider and expand on their responses rather than waiting for the teacher to offer an answer.
- Oral feedback can be used as part of an assessment strategy when assessing *HSW*.
- Oral feedback should focus on structured shared learning outcomes and success criteria.

Excerpt from the Assessment for Learning (AFL) 8 schools project

Classroom dialogue (whole-class, group or paired discussion) is at the heart of good AfL as it enables pupils to develop their thinking and to learn from each other. Teachers need to develop pupils' dispositions, skills and confidence to engage in reciprocal talk within a positive climate for learning.

Explanation

Vibrant, structured and focused dialogue provides pupils with the opportunity to dig deep into their own understanding and identify what they need to learn, support the learning of others, work collaboratively and enjoy learning as an active participant.

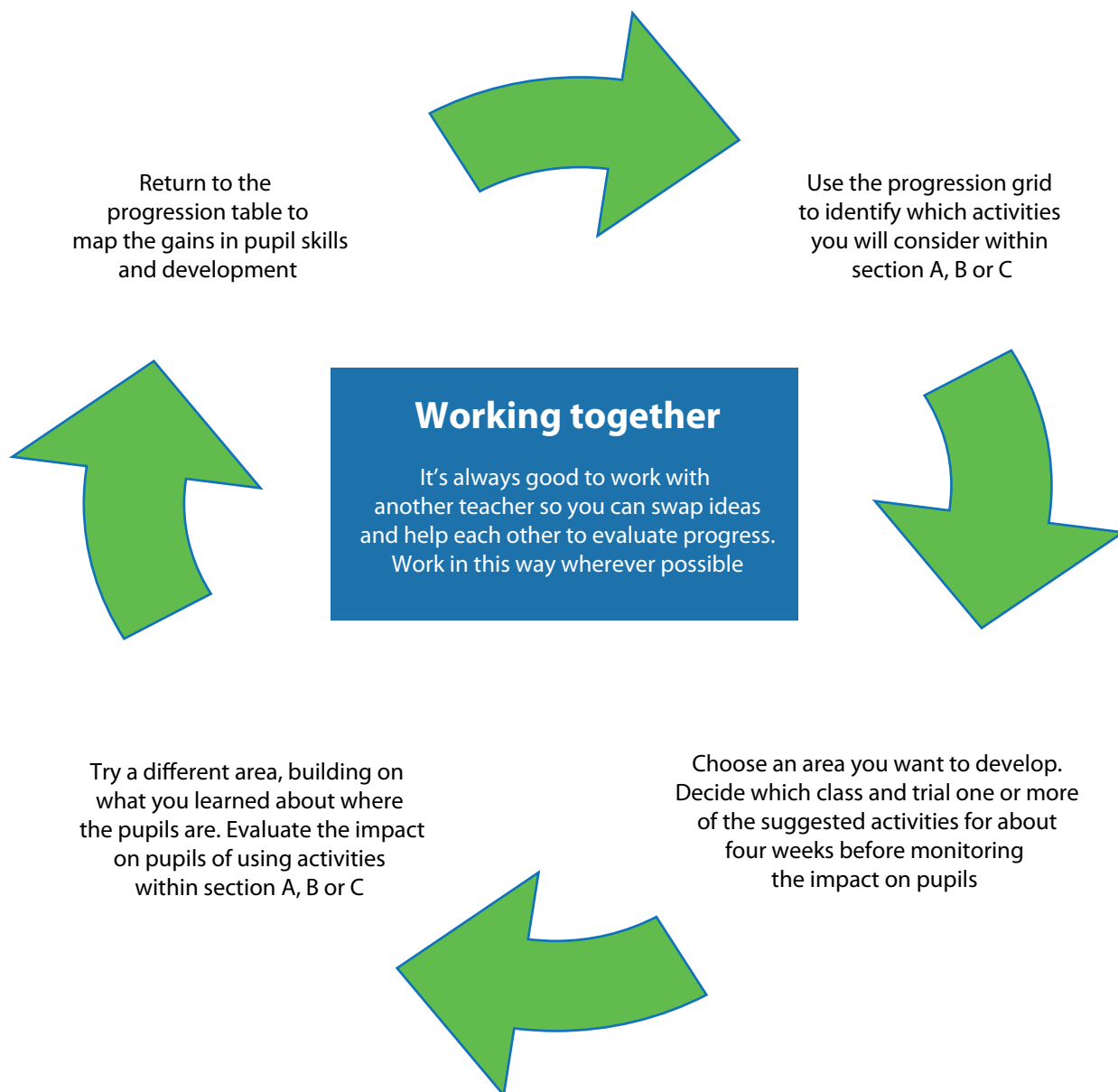
Dialogue is underdeveloped in many lessons and so AfL simply isn't happening no matter what strategies the teacher uses.

Dialogue is sometimes avoided by teachers (and pupils) because it can result in 'loss of control' (disengagement and disruption). Typically, this is because pupils do not have the skills, protocols or habits of discussion or because discussion is insufficiently focused.

The following material builds on the tasks outlined in the 'Ready for more?' section of *Unit 4 Module 1: Oral feedback* from the AfL whole-school training materials.

Cycle of professional development

The diagram explains how to use the progression table and take the next steps to develop your expertise in oral feedback.



Reviewing existing practice in oral feedback

The following progression table provides a tool for a department or individual teachers to review current practice and to identify an appropriate starting point for departmental development.

As a department, agree and highlight the statements that best reflect the practice of the whole department. At the bottom of each column is a reference to the tasks that will support your current practice and provide the appropriate material to develop from this point.

Progression table: reviewing existing practice in oral feedback

Highlight the table to show which column (Focusing, Developing, Establishing or Enhancing) best describes practice in your classroom or department. Look at the pupils then the teachers. This should be based on evidence from lesson observations or pupil and teacher voice.

Identify which row(s) are in need of most development.

Go to the activities that will best support your professional development needs (A, B or C) and try the activities in the most appropriate box.

	Focusing	Developing	Establishing	Enhancing
Pupils	<p>Most feedback is about effort or behaviour and is not related to learning objectives or outcomes F1</p>	<p>Feedback is often related to the learning objectives and outcomes, providing the opportunity for pupils to respond D1</p>	<p>There is evidence of appropriate responses to oral feedback which is linked to <i>How Science Works (HSW)</i> objectives and outcomes Es1</p>	<p>Feedback is based on <i>HSW</i> objectives and outcomes so pupils know where in their work they have improved En1</p>
	<p>Comments from pupils on each other's work is not well focused and goes unchallenged F2</p>	<p>Specific oral feedback as a class, individually or in a small-group setting provides opportunities for specific, useful responses including pupil-teacher feedback D2</p>	<p>Different types of oral feedback provide opportunities for pupils to engage in focused peer feedback, in relation to learning outcomes Es2</p>	<p>Well-established strategies for group and guided work that involve feedback enable a range of interactions to give regular detailed oral feedback related to progression in <i>HSW</i> En2</p>

Teachers		<p>There is awareness that oral feedback needs to relate to the learning objectives and outcomes</p> <p>F3</p>	<p>Oral feedback is becoming more focused on learning objectives and outcomes</p> <p>D3</p>	<p>Oral feedback is securely focused on learning objectives and outcomes linked to progress in <i>HSW</i></p> <p>Es3</p>	<p>Planning for oral feedback is an integral feature of lesson preparation to support progression in learning with respect to <i>HSW</i></p> <p>En3/4</p>
<p>Oral feedback is spontaneous but not planned</p> <p>F4</p>	<p>Opportunities for oral feedback are beginning to be developed; including teacher–pupil, pupil–pupil and pupil–teacher</p> <p>D4</p>	<p>Oral feedback opportunities are integral to medium- and short-term planning</p> <p>Es4</p>	<p>A varied repertoire of types of oral feedback is used to help clarify the next steps for pupils in relation to <i>HSW</i></p> <p>Es5</p>	<p>Different types of feedback in response to evidence of progress in <i>HSW</i> are used well to enable pupils to take the next steps in their learning</p> <p>En5</p>	
<p>Oral feedback focuses on teacher–pupil non-specific interactions</p> <p>F6</p>	<p>Different types of oral feedback start to emerge, including questioning to probe progress against the learning objectives and outcomes to help pupils improve their work</p> <p>D5</p>	<p>Lessons are planned, using the <i>HSW</i> progression grid to focus on areas for development with targeted pupils or groups of pupils</p> <p>Es6</p>	<p>Oral feedback from pupil to teacher, teacher to pupil and pupil to pupil forms part of a continuous dialogue that relates directly to progression in <i>HSW</i> skills</p> <p>En 6/7</p>		
<p>There is little pupil–pupil dialogue about the learning objectives and outcomes</p> <p>F7</p>	<p>Opportunities are provided for pupils to give feedback to their peers (in relation to learning outcomes)</p> <p>D7</p>	<p>Oral feedback is structured and modelled to facilitate pupils' oral feedback in relation to <i>HSW</i> learning outcomes</p> <p>Es7</p>	<p>A: Go to these activities to move from Focusing to Developing beginning on page 10</p>		
<p>A: Go to these activities to move from Focusing to Developing beginning on page 10</p>	<p>B: Go to these activities to move from Developing to Establishing beginning on page 13</p>	<p>C: Go to these activities to move from Establishing to Enhancing beginning on page 16</p>			

A: Activities to move from Focusing to Developing

Choose the box that you have identified from the review of the progression grid.

Moving from F1 to D1	Most feedback is about effort or behaviour and is not related to learning objectives or outcomes F1	Feedback is often related to the learning objectives and outcomes, providing the opportunity for pupils to respond D1
<p>How do I get there?</p> <ul style="list-style-type: none"> ● Select a series of lessons that will be taught in the near future. <ul style="list-style-type: none"> – Check and plan where necessary to incorporate and sharpen the <i>HSW</i> learning objectives in your planning. ● Share these <i>HSW</i> objectives with the pupils. <ul style="list-style-type: none"> – Inform the pupils that oral feedback will relate directly to the <i>HSW</i> learning objectives. 		
Moving from F2 to D2	Comments from pupils on each other's work is not well focused and goes unchallenged F2	Specific oral feedback as a class, individually or in a small-group setting provides opportunities for specific, useful responses including pupil–teacher feedback D2
<p>How do I get there?</p> <ul style="list-style-type: none"> ● Select one teaching group and plan opportunities in the following four weeks to work with individuals, pairs or groups of pupils on focused <i>HSW</i> learning objectives. ● Concentrate your oral feedback on these <i>HSW</i> objectives. ● Plan to give specific feedback to challenge pupils to improve their work. Use the sheet '<i>Examples of oral feedback</i>' (from the Assessment for Learning whole-school materials: Unit 4 Module 1: Oral feedback) to help you. This can be found at the end of this document. ● At a subsequent meeting ask teachers to bring back pupils' work and evaluate the impact of the approach on pupils' progress in science. ● Within a department meeting evaluate the effect of this and plan further opportunities for development. 		

Moving from F3 to D3 and F4 to D4	There is awareness that oral feedback needs to relate to the learning objectives and outcomes F3	Oral feedback is becoming more focused on learning objectives and outcomes D3
	Oral feedback is spontaneous but not planned F4	Opportunities for oral feedback are beginning to be developed including teacher–pupil, pupil–pupil and pupil–teacher D4

How do I get there?

- Select one teaching group and plan opportunities in the following four weeks to focus oral feedback on learning objectives.
- Plan open-ended questions to stimulate and challenge pupils' thinking.
- Try to anticipate possible pupil responses to open-ended questions and oral interventions.
- At the end of the four-week period evaluate successes and issues arising in order to move this forward into regular lesson planning.

Moving from F6 to D6	Oral feedback focuses on teacher–pupil non-specific interactions F6	Different types of oral feedback start to emerge, including questioning to probe progress against the learning objectives and outcomes to help pupils improve their work D5
		Specific individuals and/or groups of pupils are targeted for feedback in lessons D6

How do I get there?

- With a colleague, observe each other teaching and record how specific and positive individual pieces of feedback are perceived to be. Record how positive/negative and specific/non-specific each example of oral feedback is during the lessons. Use the Oral feedback quadrant (from the Assessment for Learning whole-school materials: *Unit 4 Module 1: Oral feedback*) to help you, marking on 'hits' as they occur. This can be found on page 21 of this document.
- Use this summary to highlight particular development needs for the teacher observed.
- These could include trialling a variety of types of oral feedback, focusing on individual, pairs or groups of pupils.
- Aim to link oral feedback to specific learning objectives and outcomes from the lesson.

Moving from F7 to D7	There is little pupil–pupil dialogue about the learning objectives and outcomes D7	Opportunities are provided for pupils to give feedback to their peers (in relation to learning outcomes) D7
<p>How do I get there?</p> <ul style="list-style-type: none"> ● Plan to provide opportunities for pupil-generated work with clear shared success criteria (based on the lesson outcomes) for one module. ● Ask pupils to discuss with each other whether they have achieved these. ● Ask them to try to give feedback to each other on how to improve their work based on the success criteria. 		

Evaluation of impact

Use these activities over a period of about four weeks. Monitor the impact by reflecting on learning gains, talking to pupils, teaching assistants and other teachers about the impact. Look at progress with periodic assessments, using APP.

Check the progression grid to see if you have moved forward in your practice.

You could also ask a colleague to watch a lesson with a focus on the area you are trying to improve, and ask them for feedback.

To continue your development, adjust what you do in the next four weeks by identifying your next steps from the progression grid and moving on to the activities in section B or C.

B: Activities to move from Developing to Establishing

Choose the box that you have identified from the review of the progression grid.

<p>Moving from D1 to Es1</p>	<p>Feedback is often related to the learning objectives and outcomes, providing the opportunity for pupils to respond</p> <p>D1</p>	<p>There is evidence of appropriate responses to oral feedback which is linked to HSW objectives and outcomes</p> <p>Es1</p>
<p>How do I get there?</p> <ul style="list-style-type: none"> ● Pair up with another teacher to observe each other teaching lessons with a specific focus on quality of pupil response to oral feedback. ● Sample pupils' work to establish whether there is evidence that <i>HSW</i> objective-based comments are being acted upon. In pairs, look at pupils' work and evaluate the impact of focusing on <i>HSW</i> objectives. ● Identify comments that prompt further thinking and clearly identify pupils' next steps. ● Compare these next steps in relation to the science Framework to support progression in skills. 		
<p>Moving from D2 to Es2</p>	<p>Specific oral feedback as a class, individually or in a small-group setting provides opportunities for specific, useful responses including pupil-teacher feedback</p> <p>D2</p>	<p>Different types of oral feedback provide opportunities for pupils to engage in focused peer feedback, in relation to learning outcomes</p> <p>Es2</p>
<p>How do I get there?</p> <ul style="list-style-type: none"> ● Plan lessons routinely to provide pupils with guidance on how to improve their work, through intervention at individual, small-group and whole-class level. ● Identify <i>HSW</i> opportunities for the next term that could represent milestones in pupils' learning. ● Identify examples of good practice and agree to trial these over half a term in relation to one or two <i>HSW</i> strands. You could use the Assessing Pupils' Progress (APP) assessment criteria grid and <i>HSW</i> progression grid to support this. 		
<p>Moving from D3 to Es3</p>	<p>Oral feedback is becoming more focused on learning objectives and outcomes</p> <p>D3</p>	<p>Oral feedback is securely focused on learning objectives and outcomes linked to progress in <i>HSW</i></p> <p>Es3</p>
<p>How do I get there?</p> <ul style="list-style-type: none"> ● Select a series of lessons that you will be teaching in the near future. ● Ensure there is planned progression through this series of lessons in understanding and skills so that oral feedback arising from each piece of work can be used routinely to identify next steps and support progression. 		

<p>Moving from D4 to Es4</p>	<p>Opportunities for oral feedback are beginning to be developed, including teacher–pupil, pupil–pupil and pupil–teacher</p> <p>D4</p>	<p>Oral feedback opportunities are integral to medium- and short-term planning</p> <p>Es4</p>
<p>How do I get there?</p> <ul style="list-style-type: none"> ● Plan into schemes of learning opportunities for oral feedback on pupils’ own work with planned opportunities for them to respond to oral feedback based on <i>HSW</i> learning objectives. ● Sample pupils’ work to establish whether there is evidence that <i>HSW</i> objective-based comments are being acted upon. In pairs, look at the pupils’ work and evaluate the impact of focusing on <i>HSW</i> objectives. 		
<p>Moving from D5 to Es5</p>	<p>Different types of oral feedback start to emerge, including questioning to probe progress against the learning objectives and outcomes to help pupils improve their work</p> <p>D5</p>	<p>A varied repertoire of types of oral feedback is used to help clarify the next steps for pupils in relation to <i>HSW</i></p> <p>Es5</p>
<p>How do I get there?</p> <ul style="list-style-type: none"> ● Plan into schemes of learning opportunities for a variety of types of oral feedback to pupils on their own work with planned opportunities for them to respond. ● Use a variety of whole-class questioning techniques such as the ‘basketball’ approach or open-ended questions with ‘wait-time’. ● Use the idea of progression in <i>HSW</i> to identify probing or rich questions that help pupils to take the next steps in their understanding and skills against the lesson outcomes. ● Schemes of learning and pupils’ work are reviewed in department time to evaluate the impact of these approaches on pupils’ progress in science. 		
<p>Moving D6 to Es6</p>	<p>Specific individuals and/or groups of pupils are targeted for feedback in lessons</p> <p>D6</p>	<p>Lessons are planned, using the <i>HSW</i> progression grid to focus on areas for development with targeted pupils or groups of pupils</p> <p>Es6</p>
<p>How do I get there?</p> <ul style="list-style-type: none"> ● Start to identify patterns in pupils’ areas of strength or weakness with aspects of <i>HSW</i> when giving feedback. ● Use this information to review activities in subsequent lessons in order to overcome issues arising, grouping pupils individually, in pairs or groups in order to target intervention. 		

Moving from D7 to Es7	Opportunities are provided for pupils to give feedback to their peers (in relation to learning outcomes) D7	Oral feedback is structured and modelled to facilitate pupils' oral feedback in relation to <i>HSW</i> learning outcomes Es7
<p>How do I get there?</p> <ul style="list-style-type: none"> ● In lessons where there are planned opportunities for pupils to generate their own work, use clear shared success criteria relating to <i>HSW</i>. ● Ask pupils to assess each other's work against these criteria, first in pairs then in fours. ● Show exemplar work to pupils in order to model next steps. ● Ask pupils to give each other feedback based on the success criteria and the information about 'what the next steps look like'. ● Ask them to try to give feedback to each other on how to improve their work, based on the success criteria. ● With practice pupils will become confident in giving good quality, focused oral feedback whenever they are given the opportunity. 		

Evaluation of impact

Use these activities over a period of about four weeks. Monitor the impact by reflecting on learning gains, talking to pupils, teaching assistants and other teachers about the impact. Look at progress with periodic assessments, using APP.

Check the progression grid to see if you have moved forward in your practice.

You could also ask a colleague to watch a lesson with a focus on the area you are trying to improve, and ask them for feedback.

To continue your development, adjust what you do in the next four weeks by identifying your next steps from the progression grid and moving on to the activities in section C.

C: Activities to move from Establishing to Enhancing

Choose the box that you have identified from the review of the progression grid.

Moving from Es1 to En1	There is evidence of appropriate responses to oral feedback which is linked to <i>HSW</i> objectives and outcomes Es1	Feedback is based on <i>HSW</i> objectives and outcomes so pupils know where in their work they have improved En1
<p>How do I get there?</p> <ul style="list-style-type: none"> ● Show pupils success criteria specific to <i>HSW</i> objectives and illustrate them with examples of achievements against these objectives and also examples of improvements (from pupils' work). ● Encourage pupils to develop their own success criteria for learning objectives. ● Ask pupils to evaluate their own progress at the end of the lesson or task and set targets for the next piece of work. 		
Moving from Es2 to En2	Different types of oral feedback provide opportunities for pupils to engage in focused peer feedback, in relation to learning outcomes Es2	Well-established strategies for group and guided work that involve feedback enable a range of interactions to give regular, detailed oral feedback related to progression in <i>HSW</i> En2
<p>How do I get there?</p> <ul style="list-style-type: none"> ● Ensure that there are clear routines within lessons for group guided work so that pupils are able to work independently while others in the class are receiving quality oral feedback. This will take some practice, but will enrich the climate for learning as pupils become aware that they will all receive feedback at an appropriate point in the lesson. ● Model the process of giving feedback to enable pupils to construct a dialogue with their peers, based on clear, structured criteria with respect to <i>HSW</i> skills. 		

Moving from Es3 and Es4 to En3/4	Oral feedback is securely focused on learning objectives and outcomes linked to progress in <i>HSW</i> Es3 Oral feedback opportunities are integral to medium- and short-term planning Es4	Planning for oral feedback is an integral feature of lesson preparation to support progression in learning with respect to <i>HSW</i> En3/4
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How do I get there?

- Plan oral feedback in lessons routinely relating to identified success criteria specific to *HSW* objectives.
- Link this feedback to progression in *HSW* as exemplified in the APP assessment guidelines so that feedback is specific to a particular skill area and gives pupils clear guidance on next steps.
- Identify in pupils' work examples of achievements against these objectives and also examples of improvements.
- Most effective or successful examples can be modelled or celebrated against the APP criteria.

Moving from Es5 to En5	A varied repertoire of types of oral feedback is used to help clarify the next steps for pupils in relation to <i>HSW</i> Es5	Different types of feedback in response to evidence of progress in <i>HSW</i> are used well to enable pupils to take the next steps in their learning En5
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How do I get there?

- Following informal assessment of *HSW* skills, plan feedback appropriate to the pupil(s) in order to facilitate next steps; these could represent milestones in pupils' learning.
- Establish success criteria which relate to APP assessment criteria and share these with the pupils with explicit reference to expected standards to provide the basis for oral feedback.
- Focus your feedback on your criteria and guide pupils on how they could improve.

<p>Moving from Es6 and Es7 to En 6/7</p>	<p>Lessons are planned, using the <i>HSW</i> progression grid to focus on areas for development with targeted pupils or groups of pupils</p> <p>Es6</p> <p>Oral feedback is structured and modelled to facilitate pupils' oral feedback in relation to <i>HSW</i> learning outcomes</p> <p>Es7</p>	<p>Oral feedback from pupil to teacher, teacher to pupil and pupil to pupil forms part of a continuous dialogue that relates directly to progression in <i>HSW</i> skills</p> <p>En 6/7</p>
<p>How do I get there?</p> <ul style="list-style-type: none"> ● Within a series of lessons, routinely build in reflection time and promote a climate for learning where discussion focused on learning can take place easily. Allow pupils to work in talk-pairs or groups for much of the time. ● Plan opportunities for pupils to work independently or with each other to review and act upon oral feedback on their own work in relation to <i>HSW</i> skills. ● Schemes of learning and pupils' work can be reviewed in department time to evaluate the impact of the approach on pupils' progress in science. 		

Evaluation of impact

Use these activities over a period of about four weeks. Monitor the impact by reflecting on learning gains, talking to pupils, teaching assistants and other teachers about the impact. Look at progress with periodic assessments, using APP.

Check the progression grid to see if you have moved forward in your practice.

You could also ask a colleague to watch a lesson with a focus on the area you are trying to improve, and ask them for feedback.

Further information

The Framework for secondary science can be accessed at: www.standards.dcsf.gov.uk/nationalstrategies. The following related documents can be found on the same website by searching using the document name or reference number.

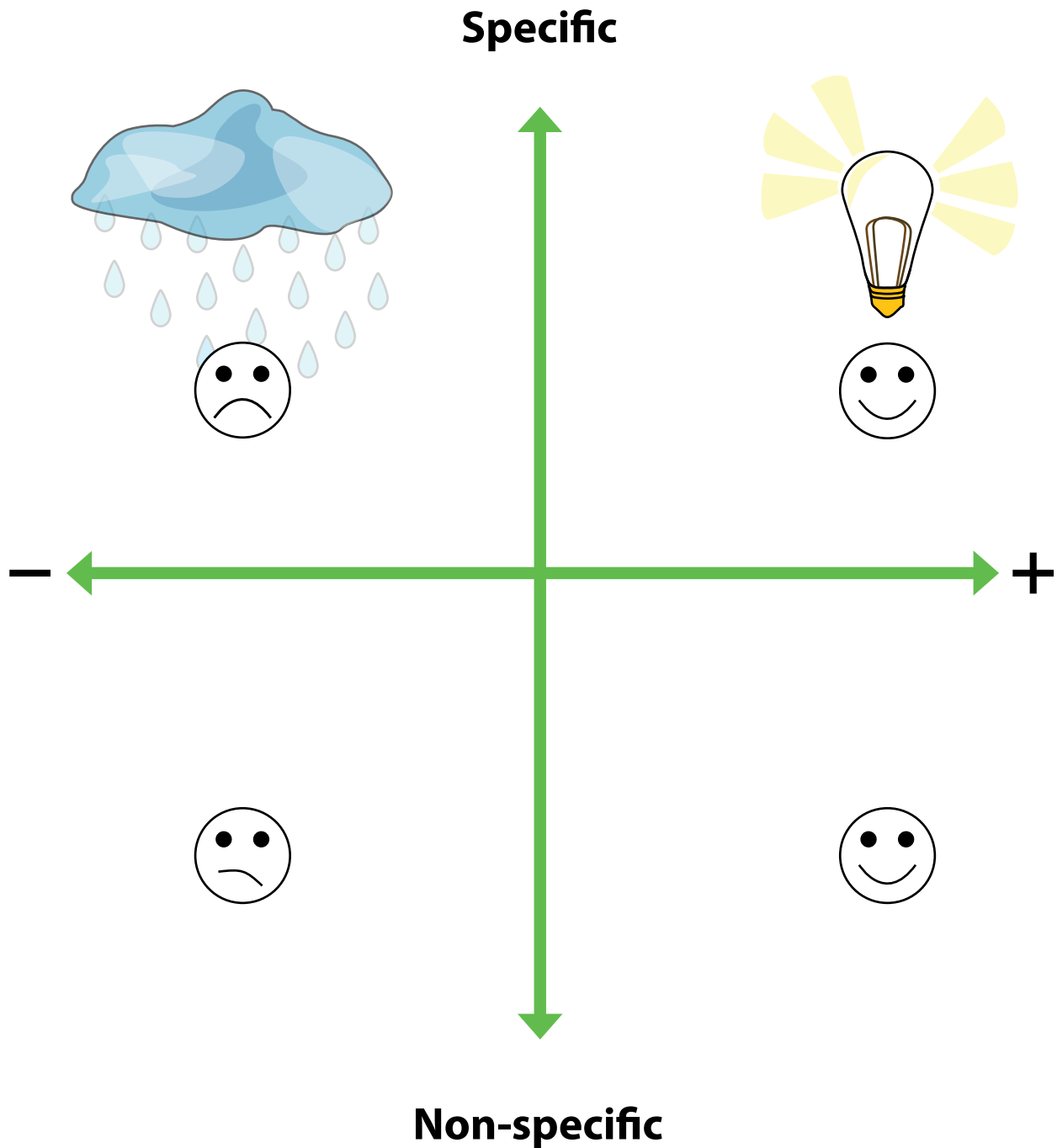
1. *Science APP: AfL quality standards*
2. *Assessment for Learning 8 schools project* – Ref: 00067-2007BKT-EN
3. *Assessment for Learning whole-school and subject development materials – Unit 4 Module 1: Oral feedback* – Ref: 0737-2004
4. *Assessing Pupils' Progress in science* – Ref: 00036-2009
5. *Assessment for Learning in science: supporting APP* – Ref: 00932-2009

Supporting resources

Examples of oral feedback

Original Feedback	Rewritten as specific positive
<p>Specific negative</p> <ul style="list-style-type: none"> Your method is far too long and disorganised, and you don't even reach a final conclusion. Look! Your answer shows you haven't understood energy transfer. No! Make sure you use the words 'condensation' and 'evaporation'. Why haven't you identified the independent variable and dependent variable? That would have helped you move your answer to Level 6. 	<ul style="list-style-type: none"> You've included lots of relevant information in your method. By returning to the original plan, you'll see how this could be made more concise and organised more clearly. Include a couple of paragraphs that explain your results to me. For example, do they show what you predicted? Do you need to repeat the measurements?
<p>Non-specific negative</p> <ul style="list-style-type: none"> Your method is not complete. Make more effort to write more next time. That answer wouldn't gain any marks in the test. Repeat the test and make sure you take the measurements correctly. You need to think more carefully about the variable you are changing. You're not really making enough progress in your explanations. 	<ul style="list-style-type: none"> You've started to organise your ideas well. Now, look back at the notes we made together about structuring reports for scientific enquiries. Try to use these to write briefly but clearly. If you have any problems we can work on the report together.
<p>Non-specific positive</p> <ul style="list-style-type: none"> That's a really good conclusion. I'll get you to read it to the class. That's an interesting answer. Could you develop it further? That's a huge improvement on your last attempt at an investigation. Well done, that's a good Level 4 answer. 	<ul style="list-style-type: none"> Great! Your conclusion is well structured and includes how the idea of energy transfer explains what happens when a ball is bounced. Let's think about the forces involved. What forces are acting on the ball as it falls?

Oral feedback quadrant



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