

RECORDING &
COMMUNICATING

ALAN PEACOCK OFFERS GUIDANCE ON SELECTING
NON-FICTION BOOKS FOR CHILDREN AND HELPING
CHILDREN TO USE THEM EFFECTIVELY

We need good navigators: choosing and using science books for children

Articles in previous issues of *PSR* have reminded us that pupils' books in primary science are rarely used, underused, or misused, even though many excellent books and schemes exist. Various explanations have been offered, such as

cost, lack of 'match' to the QCA scheme, failure to differentiate, lack of visual literacy, cultural inappropriateness, and language problems (Peacock, 1995, 1997). So how do you choose the right text for your pupils? And how do you help them get best use out of the print and on-screen materials in your school and classroom?

INDEX OF TEXT DEMAND (ITD)

You should first select a page or double-page spread of relevant text (either print or on-screen). Consider the pupils with whom it will be used, and answer the questions below. To estimate Text Demand: count the number of 'YES' responses.

Conceptual demand

- 1 Are any of the ideas on the page **new** to them?
- 2 Are any of the concepts **abstract**?
- 3 Does the page contain **concepts that need to be understood in order to progress**?

Language demand

- 4 Do the words occupy **more than 50% of the page**?
- 5 Does the page contain **new vocabulary**?
- 6 Are sentence structures **long and complex**?

Visual demand

- 7 Does the page contain **pictures/ photographs**?
- 8 Does it contain a **table, chart or graph**?
- 9 Does it contain a **cross-sectional diagram**?
- 10 Does it use **symbols, such as arrows or icons**?
- 11 Does it use illustrations that need to be **linked sequentially**, such as a cartoon, or stages in a process?

Format

- 12 Is the format **unfamiliar** to your pupils?
- 13 Do the words and sentences cut **across the page**, rather than following on down the page, as in narrative text?
- 14 Are words and visuals **not explicitly linked**?

Message

- 15 Are **instructions ambiguous**; will children need your help to follow them?
- 16 Are there **practical obstacles** to doing the prescribed activities in the classroom (e.g. lack of resources)?
- 17 Are the instructions **inconsistent** with your teaching style?
- 18 Is the text **written or published in another country or culture**?

0–6 low demand
7–11 average demand
12+ high demand

Choosing

More and more new materials appear all the time, but that does not mean children (or even most adults) know how to use them to best effect. Reading has been given a huge emphasis in recent years; however, less attention has been given to the important issue of helping children to use more complex types of non-fiction text, with interlinked words, diagrams, pictures, icons and instructions, effectively. Most science books and websites have these more complex formats. As a result, we created the Index of Text Demand (ITD) to help teachers make a rapid assessment of any piece of material, so that they can choose those that are well suited to their own pupils (see panel).

The ITD is intended to deal with more than just linguistic issues. It

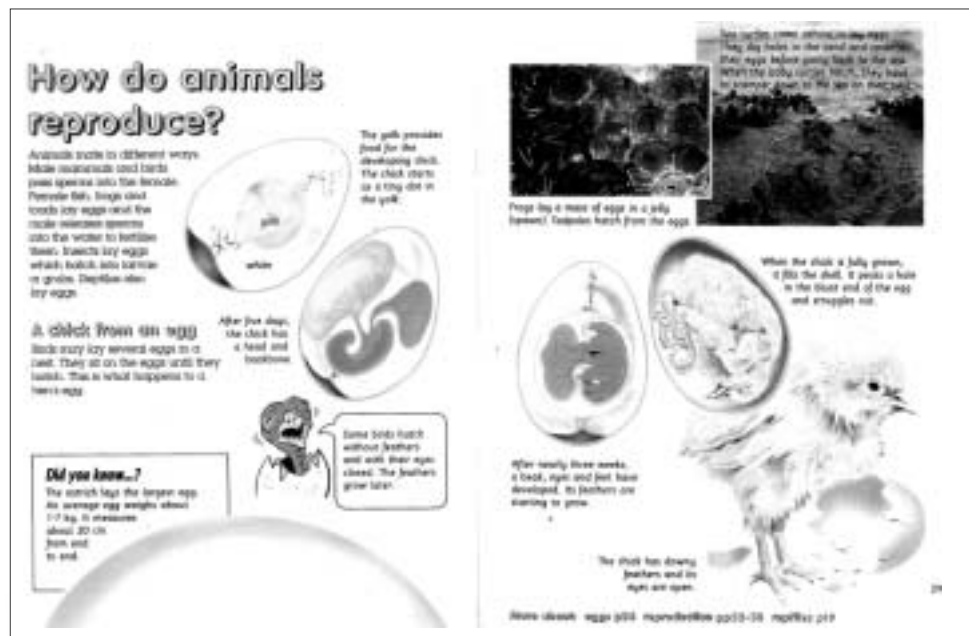
covers five aspects of the demand made on children, all of which affect a child's ability to deal with a piece of text. If the demand is too high, children will simply not be able to learn from the text.

To use it, choose any piece of text that might be used by your children as part of their science learning. Answer yes or no to all the questions, as they apply to your specific class. Then simply add up the 'yes' score. If the score is 12 or over, your children may well need help to use the text effectively. The index has been trialled in primary schools in the UK and in both English – and French-medium classrooms in Quebec province, Canada.

Using

Whatever the material you want your children to use, they need to learn to use it effectively. Our research suggests that teachers are very good at selecting materials that are attractive to children and that have appropriate content: however, they are less inclined to make time to teach children what to do with it. Different kinds of texts have different purposes, and children may not always recognise the specific purpose of a science book or web-page. Is it telling them some new facts, demonstrating a process, asking them questions about a diagram, or requiring them to do something? Often, when children are presented with an attractive but visually unfamiliar layout, they become unsure of where the important information is located. You might assume that literacy teaching deals with this; evidence suggests, however, that children do not readily transfer what they learn during the literacy hour to their use of text in science lessons (Peacock and Weedon, 2002).

So the first step is to teach children where and how to look for information in their science books. You can help children with this by asking questions, such as: *What do you need?* *Where are you going to look first?* *What will you look for next?*



What will you write down? Children tend to look first at blocks of text, but it is usually more helpful to encourage them to look first at titles, captions, icons, questions or pictures. When a child has identified the page they need to use, you can help by 'teaching the page'. This means asking questions as the child tries to 'navigate' around the page, such as: *What is this?* [points to heading, picture, icon, caption, diagram, etc.] *Why did the author put it there?* *What does it tell you?* *What else tells you about...?* *Where can you show me something that tells you about ...?* *After you have [read the heading, studied the diagram, followed this instruction, etc.], what do you need to do next?* *Can you find ... [a question, a conclusion, an important word, a table of information]?* *How do you know that ... [you have found out all the information you need]?* Once children have learned to master this kind of navigation in a range of science text types, it then becomes much easier to plan science work around the use of fairly complex visual material such as instruction sheets, science schemes, reference books and

web-pages. One reason why some teachers may be reluctant to do this at present is precisely because children who have not been 'taught the page' make inordinate demands on teachers' time, to the extent that it is easier to dispense with the printed material altogether. This is sad, because more and more good material exists that children can work from directly and independently. Once your children are good navigators, they can go anywhere!

References

Peacock, A. (1995) The use of primary science schemes with second language learners. *Primary Science Review*, 38, 14–15.
 Peacock, A. (1997) Surfing before they can walk: why do children and teachers have difficulties using science text material? *Primary Science Review*, 46, 26–27.
 Peacock, A. and Weedon, H. (2002) Children working with text in science: disparities with 'literacy hour' practice. *Research in Science and Technological Education*, 20(2), 185–197.

Children need to learn how to 'navigate' their way round complex non-fiction texts in order to use them to best effect, such as this typical double-page spread from a science text. (New Horizons Pupil Book Y3/4, Cambridge University Press)

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