Planning Across the Curriculum: Using the ARBs I

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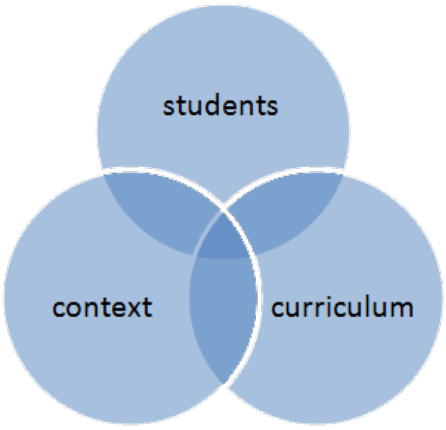
Jan Eyre, Chris Joyce, Carolyn English, Adrienne Carlisle (2012)

The ARB resources cover three curriculum areas, a range of topics and levels, and can be used in many ways to support teaching and learning. When planning for learning, there are three broad areas that you might start from − a topic or context, the curriculum, or your students' strengths and needs.



Adapted from Teaching Writing across the Curriculum in Years 4-6,
New Zealand Ministry of Education, 2012

Whatever your starting point, planning should include activities that provide evidence for making decisions about students' learning. The ARBs is one resource that provides activities designed to support teachers and students to do this.

Starting from the topic/context
In this example the starting point is a context, or "topic". The learning area is science. There are many reasons for choosing a particular topic as a starting point for classroom work. For example, you might choose to focus on birds because there is a special event at a nearby bird sanctuary, because your class has just got a budgie, or because it is part of your planned school curriculum. Whatever your reasons, your planning will involve working out what you, as the teacher, need to know about the topic, the relevant achievement objectives (NZ curriculum), and the students' strengths and needs.

Knowing about the topic
Birds provide a context for exploring numerous big ideas in science such as reproduction, flight, classification or, as in this example, adaptations. Some questions to ask at the beginning of the planning phase are:

- What big science idea will be the focus of the learning?
- What do I know about this big idea?
- How does the context of birds help students learn about this big idea?
- Where can I add to or check my own understandings?

The teacher notes from ARB activities related to the topic will be useful. To find all the relevant science activities:

1. make sure you are logged in
2. click on the 'Science' bank on the home page of the ARB website
3. use the keywords 'adaptations' and 'birds'.

To find the teacher notes for particular activities, click on the large buttons to right of the resource.

The science notes for teachers at the front of Birds: Structure, Function, and Adaptation (Building Science Concepts Book 3) also provide background information.

Knowing about the curriculum

- What do I understand about the nature of science focus?
- What nature of science idea could be explored in this context?
- What does the curriculum say students should understand about the big science idea?
- What are the reading, writing and/or mathematics requirements?

For example:

Science, Level 3
Nature of Science: Investigating in science
Ask questions, find evidence, explore simple models, and carry out appropriate investigations to develop simple explanations.
Contextual Strand:
Living World: Explain how living things are suited to their particular habitat.

Literacy Learning Progressions
By the end of Year 6
Generate content that is usually relevant to the task, supporting or elaborating main ideas with detail that has been selected with some care.
Use an overall text structure that is appropriate for the purpose.

The ARB website has a range of general and curriculum-related teacher resources. You can search these from the homepage information blocks under the search box. Click on Research and article and then *Science* will take you to research-based articles/resources specifically designed to help build pedagogical content knowledge.

Knowing about the students

- What do students already know about adaptations?
- What do students already know about investigating?
- What literacy and mathematics skills do students need to support their learning?
- What can they do already, what will we need to practise, what will I need to teach? (Think about the class as a whole, groups and individuals.)
- Where will I find learning and assessment tasks to support students' learning?

ARB resources can be used in a variety of ways. Try searching for 'birds' in 'All Banks', to find a range of resources across English and maths, as well as science. You might choose to use a resource from the English Bank such as Feathery Friends to introduce the topic and find out what students already know. (This resource uses a story from a Connected journal.)

"Feathery Friends" by M B Takaro, Connected 1, 2001 (Learning Media)

Searching the science bank using the keywords 'adaptations' AND 'birds' will provide you with a list of classroom tasks to choose from, depending on your students and their needs. Feet and Beaks (LW0501) and Feet and beaks II (LW0643) are two resources that provide a choice of strategies for exploring the same idea (pencil and paper or a card matching activity). Other resources include Bird Feet and Beaks (LW0559) and Beaks (LW0631). All these resources can be used in a variety of ways to support teaching and learning, including formative assessment.

Science ARB: Feet and Beaks (LW0501)

Some ARB tasks are suitable for summative assessment. Another source of ideas is the Building Science Concepts books. For example, ‘Design a bird’ involves designing a new type of bird, describing its features and explaining how it is adapted to its environment. This task presents teaching and learning opportunities related to both science and literacy, as students develop written explanations that demonstrate understanding of underlying concepts.

My bird is called The crab-digger. Its beak is long so it can force open crabsbacks and things. It has nostrils at the end of its beak so it can dig and smell its food.

Its legs are long so it can run fast on sand and its feet have long toes so when the tide comes in it can grip and go out to get its food.

From: Building Science Concepts 3: Birds: Structure, Function, and Adaptation, Ministry of Education (2000) p.22.