

ACTIVATE YOUR STUDENTS

*An inquiry-based learning
approach to sustainability*

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Introduction

This series has been designed to help you activate your students and get them involved in their environment.

By nurturing an environmental awareness in our students we encourage the development of lifelong learning through relevant acquisition of skills. By actively investigating environmental issues, students:

- * achieve a sense of moral ownership for and pride in the world around them
- * build on their own interests and develop their own activities
- * question the validity of existing information
- * model appropriate methods for gathering data and information and analysing it
- * actively seek reinforcement for the skills they develop
- * achieve satisfaction for a job well done.



Learning approaches

Learning as it is applied to today's curriculum is progressive and developmental. The tasks become more complex and the knowledge increasingly refined. As students progress through the stages of learning they are seen to be moving towards their desired goals and achievements. The productive opportunities to learn and do that are featured in this series allow students to progress from one level to the next in a continuous, coherent way.

Problem-based learning is a pedagogical approach that involves the whole class of students in planning and establishing their own learning through a unit of their own choosing. The environmental problem is identified through a range of general topics such as *sustainable houses* or *sustainable eating*. Questions are then used to identify the problem that will be explored and observed, and possible solutions proposed.

For example:

1. Identify an environmental area for study
Sustainable living within our school.
2. Define a problem to study and observe
How much energy is wasted within our school each day?
3. List the objectives for study
Observe and report on the amount of energy that is wasted by not turning off lights and leaving equipment on standby.
4. List the methods for observation
Counting, listing, surveying, interviewing, etc.
5. List the materials needed for observation.
6. Suggest possible solutions
How can we reduce energy waste in our school?
7. Present the results of the study
How will we present our findings to our school and our community?

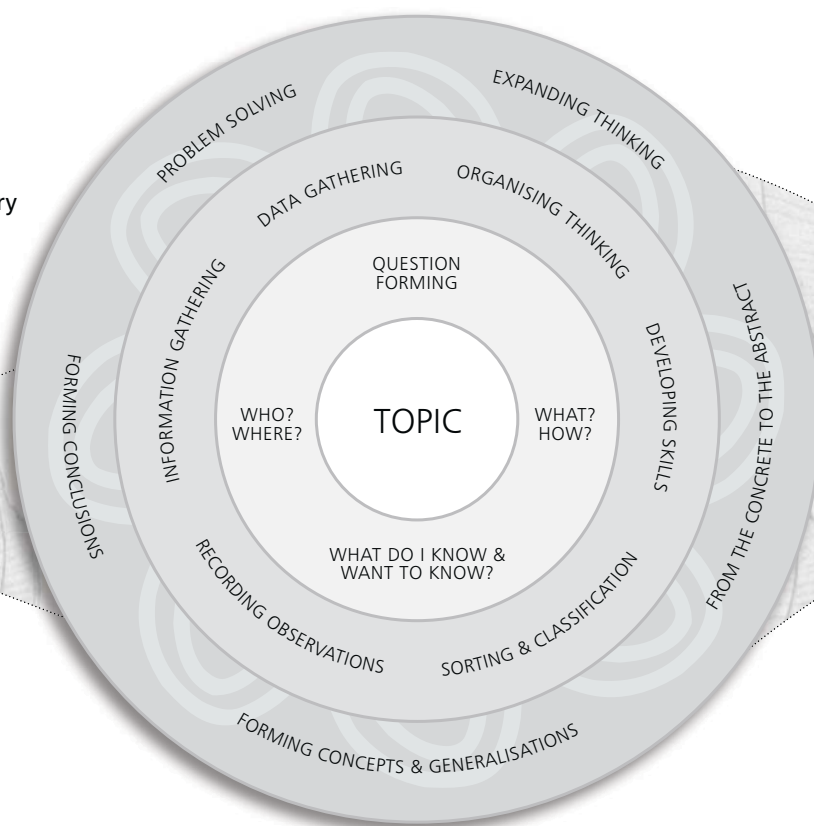
Inquiry-based learning is a practical approach to learning that involves students forming their own questions about a topic and then exploring their answers. Question-forming is part of the plan; problem-solving is part of the outcome.

Inquiry-based learning encourages ownership and responsibility as students actively search for and construct knowledge and its meaning through a variety of research

methods and resources. As part of this process students encounter challenging and conflicting ideas and can begin to transfer what they have learnt to new circumstances.

Like concentric circles, the influence of their environment becomes stronger as children grow and become interested in finding out more – from their immediate focus on themselves, to their homes, their communities and eventually their world.

➤ The ripple effect of inquiry learning



Activate your students

Each book in this series incorporates three units, based on different environmental issues, which have been proposed according to syllabus guidelines and the outcomes of national curriculum profiles. The series recognises that the communication skills of speaking, listening, reading, writing and spelling are fundamental to each learning domain, and should be incorporated into the daily lesson planning of each unit.

The three upper primary units are:

- * Sustainable energy
- * A sustainable home environment
- * Sustainable agriculture for a healthier world

These units have been developed as a guide for broader unit planning. By having the basic structure provided, the teacher is then encouraged to build a more detailed and involved unit and carry this over to further thematic units of choice. The suggested inquiry can be used as a whole-class investigation, with students determining their own independent inquiry alongside this model.

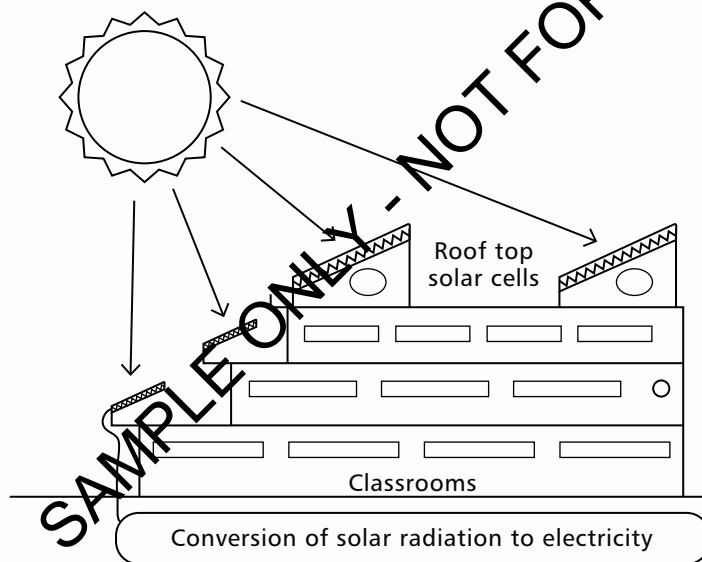
Each unit is structured to follow these important steps in problem-based and inquiry-based learning:

Designing a sustainable school

In the future, Australian buildings will be designed to have minimal impact upon our environment. Renewable energy sources will replace coal-burning electricity plants and all buildings will become more self-sufficient, supplying their own energy needs and dealing with water and sewerage problems more efficiently.

Below is a drawing of a university building designed by its students who were studying environmentally friendly architecture.

- 1 Study this drawing with your partner and discuss how such a plan might work for your school. How would you design a new building for your school?
- 2 Refer to the goals listed in **Activity 2.5**. How will you incorporate these goals into your school plan?
- 3 Draw a plan of a sustainable school of the future.



- * If you could change one thing in your classroom to make it more sustainable, what would that be?

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- * What thing would your partner change?

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