Using local resources: life processes
Secondary Science

Using local resources: life processes

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What this unit is about

In this unit you will develop strategies that will help you make use of your local environment to enhance your teaching. You will be encouraged to think about how to make the learning environment as attractive as possible, how you can improvise scientific equipment, how to use your students as a resource, and what expertise you might be able to draw on in the local community.

Ask any science teacher, anywhere in the world, whether they think they have enough resources to teach science to their satisfaction and you will more than likely find that their answer is ‘No!’ This is particularly true of teachers working in rural areas. It is easy to focus on the difficulties, but good science teachers are resourceful. Even if they do not have access to scientific equipment, they can improvise and make use of local resources in order to teach science. They will also think about the learning environment in their classroom and how to make links between scientific ideas and students’ lives. Trying to teach science without access to resources can be very challenging, even for experienced and knowledgeable teachers.

This unit encourages you to think about what you do have in terms of resources rather than thinking about what you do not have. It shows you how to use locally available resources more imaginatively and effectively to become a resourceful teacher. The teaching topic used to demonstrate these strategies is life processes for Class X. All of the strategies shown can be adapted for use elsewhere in the science curriculum.

What you can learn in this unit

- How to make the most of the resources available to you.
- How to use a range of local resources to support learning in science.
- The benefits of making the learning environment as attractive as possible.

Why this approach is important

Science is a practical subject that is relevant to all our lives. As well as understanding scientific concepts, students need to learn practical skills and be able to make connections between the science that they learn in school and their everyday lives. In order to encourage your students to become active participants in lessons, you need to find ways of engaging and motivating them, and relating the body of science knowledge in the textbook to their lives. If students are motivated and interested then they will learn more effectively.

Doing practical work is one way to help your students become actively involved, and one of the activities in this unit will help you to think about how to improvise practical equipment. However, you can also think about how to enhance the learning environment and how to draw on expertise within your school, or in the local community.
1 Being a resourceful teacher in a challenging context

The purpose of this section is to help you to focus on the resources that you have available in your school, in order to help you teach science. Case Study 1 describes how a group of teachers responded to the challenge of being resourceful.

Case Study 1: Teachers brainstorm how to be resourceful

A group of mixed subject teachers working in challenging circumstances recently brainstormed suggestions about how to be resourceful despite such difficult conditions. They came up with many ideas – the list below shows the eight that were thought to be the most useful:

- Make maximum use of the local environment as a teaching aid. All schools have an environment that can be exploited for discussion, investigations and sources of classroom data.
- Make maximum use of the local community as a teaching aid. Parents and others are an important source for stories, for remembering what things were like in the past, and for having opinions on everyday issues. They can also help to find materials for lessons such as plants (use vegetables such as onions and tomatoes), chicken feet (to look at muscles and tendons), fish (to look at gills and external structures) from the market – perhaps something that is left over at the end of the day or from the farm.
- Exploit the communication systems currently in place. Nearly all communities now have access to radio, often with many channels available. Use some of the programmes available to stimulate debate and discussion.
- Make teaching aids from materials around the school. Old boxes, magazines, newspapers and even plastic bottles can be turned into teaching aids. (One of the teachers in the discussion group described how she had built a model of a volcano using such materials. The model could be opened out to show the ‘inner workings’ of the volcano.)
- Cooperate with other schools, directly or by exchange of letters. This can be highly motivating for students and it opens up all sorts of possible exchanges of information (for example, exchanges of information between urban and rural schools can lead to interesting comparisons).
- Let the school become a resource for the local community: one teacher described how mothers came to some lessons and thus improved their own literacy.
- Set up a school garden: Plants can be grown in even a small area. Students of all ages can benefit from participating in the planning, planting, growing and use stages in the development of a garden.
- Use the cybercafé in the local town to look at websites with more information about current topics.

For further ideas on using resources, look at Resource 1.