Australian Curriculum Year 5 Science Sample assessment | Assessment resource

Adaptations

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# Current scientific conceptions and students’ prior understandings

## Current scientific conceptions

All living things have a common set of characteristics: they grow, move, reproduce, respire, excrete, require nutrition, and are sensitive and responsive to their environments. The display of any one of these characteristics, by itself, does not provide sufficient evidence of life; rather, it is a combination of most or all of these characteristics that indicates something is alive.

Students can be given repeated opportunities to refine and extend their understanding of what it means for an organism to be ‘alive’.

There is a strong relationship between the observable features and behaviour of living things, their environments and their ability to obtain their needs. Particular living things have similar or different features and behaviours depending on similarities and differences in their environments and needs. For example, many animals in aquatic environments have fins, which help them to move in water, whereas many terrestrial animals have limbs, which enable them to move on land.

The features and behaviour of an animal or plant that enable it to survive in the environment in which it lives are referred to as ‘adaptations’. A living thing’s adaptations are most effective in its own environment. If its environment changes, these adaptations may no longer be effective and the living thing may have difficulty meeting its needs.

## Students’ prior understandings

Students’ prior understandings may differ from current scientific conceptions in a range of ways.

Some students may have difficulties seeing the features of living things in terms of adaptation. They may think that the:

* features of a living thing are the result of its wishes or wants
* features of a living thing occur for a particular purpose.

It is likely that students will have had some prior experience in making links between the features of living things and the needs of those things — for example, they may relate the shape of a bird’s beak to the food it eats, or the type of limb an animal has to the way it moves. Teachers can help students build on this prior experience and knowledge to develop a broader understanding of the relationship between living things’ features, needs and environments.

### Resource

Sourcebook modules provide teachers with a range of learning and teaching ideas. Teachers are encouraged to modify modules to meet the specific needs and interests of particular groups of students and individual students, their own needs and the learning environment.

QSA, Science (1999) sourcebook module > Life and living > Observable features and survival, [www.qsa.qld.edu.au/992.html](http://www.qsa.qld.edu.au/992.html).