

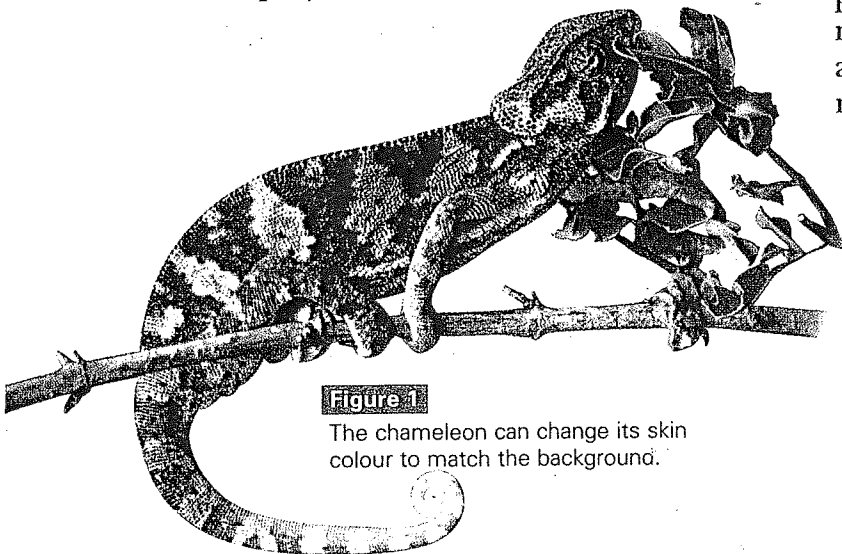
# Adaptations for Survival

Every ecosystem has factors that make it different from other ecosystems. The ice-floe ecosystem is cold, and the water is salty; a wetlands ecosystem near a southern lake is warmer, and the water is fresh. To succeed in an ecosystem, plants and animals have special structures and behaviours, called **adaptations**. The fat that polar bears put on in winter is an adaptation. The fat helps protect the bears from the cold. In this case study, you will examine photographs of organisms and speculate on how their special adaptations help them to survive.

## Changing Colour

The chameleon (**Figure 1**) is a reptile that lives in trees and feeds on insects. It is not large, so it also has to worry about being eaten by larger animals. The chameleon has an interesting adaptation that helps it survive. It can change its skin colour so it blends with its background. Animals that use colour to hide are using camouflage. The chameleon has another adaptation—a long tongue with a sticky lump at the end that it launches to catch insects.

- How does camouflage help the chameleon catch insects?
- How does camouflage help protect the chameleon from predators?
- What other animals can you think of that use camouflage for protection or to hide from prey?

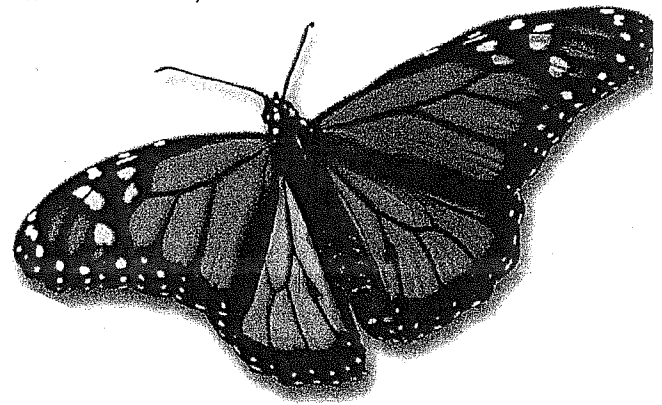


**Figure 1**

The chameleon can change its skin colour to match the background.

**Figure 2**

The bright patterns on the wings of the monarch butterfly warn birds not to eat it.



## Using Bright Colour

The monarch butterfly (**Figure 2**), which lives in southern Canada in the summer, has two related adaptations. The butterfly produces a chemical that gives its body a very bitter taste, which birds hate. Its wings also carry a bright pattern that is easy to see. After trying to eat a monarch, a bird will remember the bitter taste and the bright pattern on its wings and avoid monarchs in the future.

- How does the monarch butterfly benefit from its adaptations?
- Does this combination of adaptations make every monarch butterfly safe from birds? Explain.
- The combination of a poison or unpleasant chemical and bright colouring to warn possible predators is not unusual. What other animal can you think of that has similar adaptations?