FEATHERED FIENDS

Early explorers thought that penguins were fish, but we now know that they are birds. Unlike members of the notorious FLYING SQUAD, such as the albatrosses and petrels, FEATHERED FIENDS 'fly' through the water rather than through the air.

Penguin wings are flattened into strong flippers that are ideal for swimming. Penguins are very social birds and gather in large numbers each year to lay eggs and raise their chicks. Although there are seventeen different species of penguin in the world, only seven different species are adapted to living in Antarctica or the Subantarctic.

King penguins *Aptenodytes patagonicus*
have very striking orange and yellow markings. They are deep divers and feed mainly on fish and squid.

The **royal penguin** *Eudyptes schlegeli is a member of the crested penguin group named for the yellow crest on their heads. The only place in the world that royal penguins breed is Macquarie Island. Krill, fish, and squid are their favourite foods.*

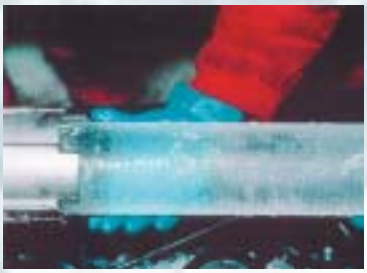
Chinstrap penguin
Pygoscelis antarctica
A thin black marking under the chin gives this penguin its name.

THINGS ARE HOTTING UP!

The evidence suggests that the Earth's climate is changing and scientists are predicting an increase in temperatures around the world. Even very small increases of a few degrees in temperature could spell disaster for plants and animals everywhere. Most forms of life, particularly those in Antarctica, could not adapt quickly enough to survive significant temperature changes. Phytoplankton and krill are especially at risk.

FAIR CONTEST?

Scientists use a computerised weigh bridge to weigh Adélie penguins as they go in and out of the colony. In the early summer an Adélie penguin regularly makes a 200 kilometres round trip to get food for its chicks. It returns with 0.5 kilograms of krill. By comparison, a krill trawler takes over 10 tonnes in one haul.



CLIMATE CHANGE

The great ice sheet that covers Antarctica is hundreds of thousands of years old. Using a special drill, scientists have extracted long, cylinder-shaped samples of ice called cores. Tiny bubbles of gas from inside the layers of ice provide information about the Earth's past climate.

Adélie Penguins

Adélie penguins *Pygoscelis adeliae* **spend winters in the Antarctic pack ice, and in spring travel great distances over sea ice to reach land, where they build their nests out of a scattered pile of pebbles. They are superb swimmers, and can use their speed to leap up to two metres vertically from the water on to ice floes to avoid their main predator, the leopard seal. Adélie penguins feed on small fish and krill.**

Feathered Fiends MENU

Krill kebabs
Fish pie
Squid beaks

BODY SHAPE *Their streamlined body shape resembles a torpedo and is very important for fast, effortless swimming. Adélie penguins can swim continuously at speeds of 4 - 7 km/h and swim in short bursts of up to 15 km/h.*

FLIPPERS *The swimming action of a penguin is similar to the flying action of a bird but penguins 'fly' through the water instead of the air!*

FEATHERS *They have almost a complete covering of feathers. Even the base of their beak is feathered! The feathers in the tough outer layer overlap each other to form a barrier against water, snow and wind that helps keep them warm. This layer is so effective that on sunny days penguins actually have a problem keeping cool.*

Once a year penguins moult, losing their old frayed feathers.

FEET *These feet are made for walking. At the end of the long, dark winter Adélie penguins walk up to 300 kilometres across the sea ice to their colonies to lay eggs and rear their chicks. They also use their feet for steering while they are swimming. The three front toes of their feet are webbed and this helps them to change direction quickly while chasing fish and krill or when trying to outrun killer whales and leopard seals.*

BEAKS *A penguin's tough beak is used for many important tasks. They build their nests out of small pebbles and rocks that they collect and carry in their beaks. They won't hesitate to give another penguin a sharp peck if they catch them stealing any of their rocks! They also catch and hold their food in their beaks. To make sure their wriggling, slippery prey of fish and krill don't get away, they have spikes on their tongues. Once they have caught their tasty meal the spikes stop the prey from escaping.*