

Science:

Waterproof Penguins

Learning Intention

We are investigating how penguins keep their feathers waterproof.

Introduction for Parents

This activity is designed to illustrate the effect of spreading water-repellent product over an absorbent material. Birds, such as penguins, use their beak to spread oil from a 'preen gland' (near their tail) all over their feathers. In this activity crayon is used (as it is wax based) to make part of the paper water-resistant. When sprayed, water should form beads on the paper that has been coloured with crayon, but soak into the untreated paper.

This effect is also used in the clothes we wear, to make jackets waterproof. To make the activity more of a scientific enquiry, pupils could colour in other shapes using felt-tips or pencils, to see if they have the same effect.

Introduction for Pupils

- ◆ Do you know how penguins keep warm?
- ◆ Penguins are in the water for long periods at a time, but need to keep their feathers in good condition and waterproof
- ◆ They spread oil all over their feathers, from a gland near their tail
- ◆ The oil helps to make the tips of the feathers waterproof, and this keeps the fluffy part of the feather dry so that it can hold a layer of air against the penguin's body

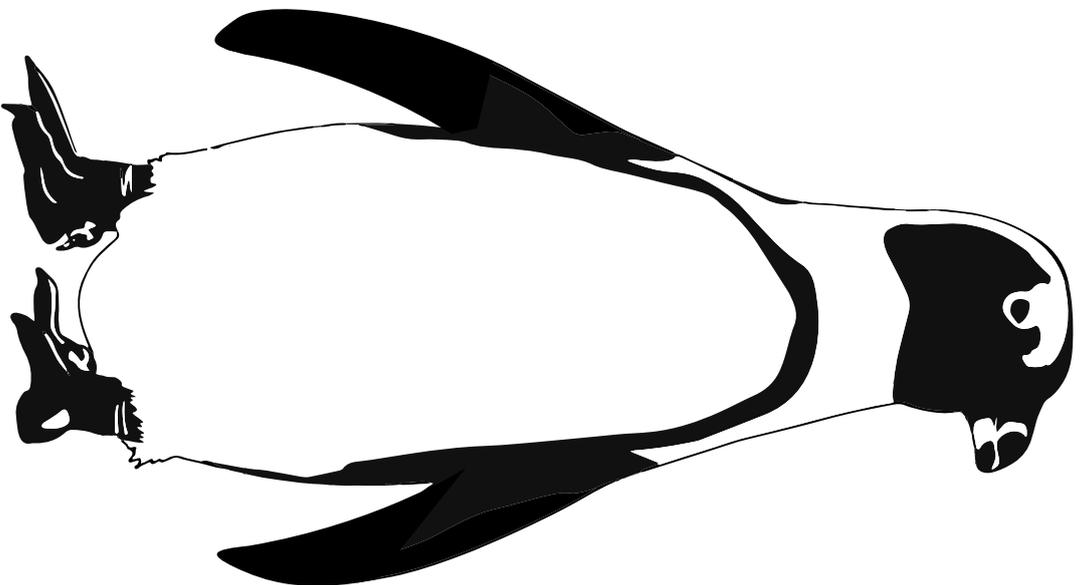
Activity

- ◆ **We are going to use crayons, which are made with wax – this works in the same way as the oil from a penguin's preen gland**
- ◆ **To test if the wax has any effect, we are going to spray two paper penguins with water – one with wax, and one without**
- ◆ **So colour in one penguin's tummy, as completely as you can, using whatever crazy colours you like – but don't get any crayon on the other penguin**

**WILD
PLANET
TRUST**



Name



Waterproof Penguins

1. Colour in one penguin's tummy using crayon.

2. Spray both penguin lightly with water.

3. Does the water soak in?