Why Do Birds Have Feathers?

LIFE SCIENCES

Get curious

Observing

Sort feathers according to any criteria of your choice.

Bring various types of feathers to class; you can also ask students to bring some. Working in teams, students divide feathers into categories thought up by them. Then all teams show how they have grouped the feathers.

OPTIONAL Video/ Slide show

You can watch a film showing the evolution of feathers.

Talk: What do other animals have instead of feathers? What features do feathers, scales and hair have in common? (they grow out of the skin, cover the body, and are constructed from the same substance).

Get going

Experiment

Students examine the structure of real feathers, finding out about their various characteristics and properties.

Use feathers brought to class. Ask half of the students to examine flight feathers (remiges) and the other half to study covering feathers ("coverts" or tectrices) (see photograph). However, at this stage, don't tell them the names of the feathers.

Conclusions

Students share results of their observations of feathers and draw conclusions. How did the examined feathers differ?

Ask students to present the results of their examinations. Also view an image showing the various parts of a feather (rachis, vane, barb, and quill/calamus): https://en.wikipedia.org/wiki/Feather#/media/File:Parts_of_feather_modified.jpg

Talk

Discuss the functions of feathers – use the differences in the structure of feathers, which students studied in the previous exercise, as a starting point.

Students list all the functions of bird feathers that they can think of (you can write them down). Then, according to their own intuition, they arrange all the collected feathers according to the functions that they fulfil in the life of a bird. View slides showing the various kinds of feathers: flight and tail feathers, as well as down and decorative feathers.

Video/ Slide show

Watch a film about the functions of bird feathers.

Video/ Slide show

Can birds use their feathers to "sing"? Watch a video about a species which creates singing sounds with the feathers of its wings!

https://www.youtube.com/watch?v=NQRzOqP9iNc

OPTIONAL Video/ Slide show

You can also watch a video about birds that possess unusually effective feathers, serving only as decoration (display feathers).

You don't have to watch the whole film - 2-3 minutes is enough.

Observing

Students build paper airplanes and throw them in the air. They think about what features they have in common with birds' feathers.

Ask: do airplanes fly if we throw them in the air? What features must they have in order to take off? Do birds have any of these features? Which of these are due to feathers? Students observe flight feathers and draw conclusions about the properties that enable birds to fly.

Constructing

Students – in groups – build a model bird using feathers.

Get practicing

Observing

Students choose a species of bird, describe its feathers and find out what environment it lives in.

They can go for a walk – in town or to a park or a forest – and describe the feathers of a bird that they observe (they can try to photograph it). They can also look for information on the internet, or in books and magazines, about an exotic bird (bird of paradise), and describe the feathers of such a bird. Moreover, they find out about the environment that this bird lives in (habitat) and ponder on the link between where it lives and what feathers it has.