

Plume's four seasons!

Here is an activity of the Museum of Natural Sciences, carried out in the frame of the passing of the Science Bus of « **Doing It Together Science** ». After having travelled through Europe, the Science Bus settles in the European Quarter on November 8, 9, 10, 2017 and offers playful and scientific “do it yourself” activities for children and grownups.

XperiBIRD.be is an educational project in participatory science initiated by the Royal Belgian Institute of Natural Sciences and Google.org in 2016. Nest boxes equipped with a camera controlled by a nano-computer are distributed for free to primary and secondary schools across Belgium, allowing classes to discreetly follow the nesting of a couple of tits. These data will then be used by the scientists of the Institute. You can follow the nesting of the XperiBIRD.be network or enrol your for next year on www.xperibird.be.

1. Introduction: What is a bird ?

- What precisely characterizes a bird (what does it have that other animals don't)?

<input type="checkbox"/> It lays eggs	<input type="checkbox"/> It has wings
<input type="checkbox"/> It sings	<input type="checkbox"/> It has legs
<input type="checkbox"/> It has a beak	<input type="checkbox"/> It has feathers

- In order to observe birds (and nature in general), I can:

<input type="checkbox"/> Lift up the lid of a nest box	<input type="checkbox"/> Be calm and quiet
<input type="checkbox"/> Be patient	<input type="checkbox"/> Run from a bush to another
<input type="checkbox"/> Have a welcoming garden, or install a bird feeding table during the winter	<input type="checkbox"/> Climb in a tree

The living environment: The ornithologist (the scientist who studies birds) analyzes the environment in which he observes the species. In biology, this is called the biotope.

- Tick the biotopes among the following proposals:

<input type="checkbox"/> A garden	<input type="checkbox"/> Antarctica
<input type="checkbox"/> The Amazonian forest	<input type="checkbox"/> The wind
<input type="checkbox"/> A flowered hill	<input type="checkbox"/> The ground

A city like Brussels is also a biotope: we observe a fauna and a flora adapted to this particular environment. Many birds live in our cities... Just like Plume, our mystery-species. But...who is it?

2. The mystery-species!

When an ornithologist sees a bird and wants to determine which species it belongs to, he/she will first determine its shape and morphology.

1. The silhouette :

Here is the silhouette of our little hero:



- Which group of birds does it belong to? (circle it)



This group is named:

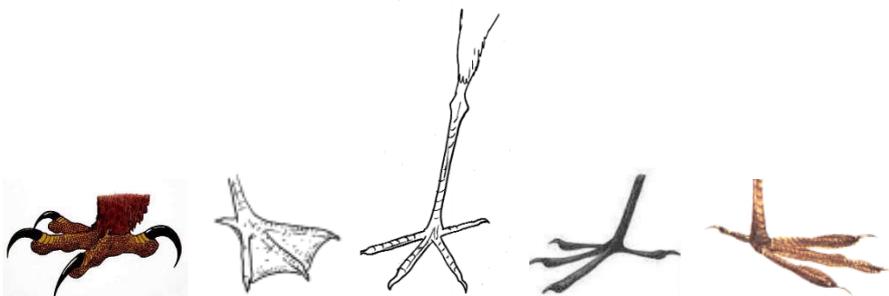
2. The size

There are birds of very different size, for example:

- **The big birds** like the heron, the buzzard or the ostrich.
- **The middle-size birds** like the pigeon, the crow or the magpie.
- **The small birds** like passerines (sparrows, robins), but also swallows, hummingbirds, budgies etc.
- What is the size of the mystery-species ?

3. The shape of legs:

- What shape are the legs of the mystery-species?



4. The shape of beak:

There is a large variety of beak shapes. Moreover, when we observe the beak of a bird, we can draw conclusions regarding its diet (what it eats).

A few examples:

- The humming bird drinks the nectar of flowers with its elongated beak.
- The woodpecker makes holes in the bark of trees to find woodlouses or insects living under the bark.
- Vultures and birds of prey use their sharp and powerful beak to cut meat.

- What shape is the beak of the mystery-species?



- What do you think it eats?

<input type="checkbox"/> Prey (mice, other birds)	<input type="checkbox"/> Fish
<input type="checkbox"/> Seeds	<input type="checkbox"/> Small worms found in the sand
<input type="checkbox"/> Insects	<input type="checkbox"/> Big nuts

5. The food:

The diet may be very different for a bird species or another. It is thus very important to know the diet of the bird species you want to feed.

According what you have observed in the fat ball, which group of bird species does Plume belong to?

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3. The recipe of fat balls:

To help birds during the winter, we can easily make small fat balls to hang in the garden. Here is the recipe:

Ingredients:

- Sunflower seeds (or a mix of seeds for birds)
- Mealworms
- Raisins
- Unsalted and un-grilled peanuts
- Solid vegetable fat (for instance, frying fat)

Material:

- A pan
- A piece of string
- A cardboard cup

Preparation:

1. Melt the vegetable fat in a pan and let it cool (with the help of an adult).
2. In the cardboard cup, mix the seeds, a few mealworms, raisins and a small amount of peanuts.
3. Make a knot at one end of the string and put the other end at the bottom of the cup.
4. Pour the fat in the cup and mix with the contents.
5. Let it cool (outside for a few hours and then in the fridge).
6. Wait for a few days before removing from the cup.
7. Your fat ball is ready! Hang it to a branch or fix it at the top of a stake.

- What are good recommendations for feeding birds properly?

<input type="checkbox"/> Don't stop feeding during the winter	<input type="checkbox"/> Give water, especially during freezing periods
<input type="checkbox"/> Put the feeding table on the ground	<input type="checkbox"/> Give cheese, processed or salty food
<input type="checkbox"/> Diversify the sources of food	<input type="checkbox"/> Install a feeding table with a roof
<input type="checkbox"/> Let the fruits rot on the trees in the garden	<input type="checkbox"/> Favour hedges in which birds will find shelter and food
<input type="checkbox"/> Give small amounts of food and renew it often	<input type="checkbox"/> Give large amounts of dry bread

Congratulations for your participation, you are now young ornithologists for real, ready to help birds in the city!

Enjoy observing them, and see you soon!