



**“Neuroeducation and animal ambassadors:
applied sciences to new educational
experiences”**

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The Temaikèn Foundation was born with a mission of protecting nature. To achieve this, they developed environmental education programs, wildlife and ecosystem research, and species conservation programs, prioritizing native species.

In Temaikèn Biopark, we develop programs about education, outreach and awareness promoting the protection and conservation of biodiversity. There, schools and educational institutions with different levels and modalities share an amazing experience with guides, keepers and teachers. About 115.000 students participate in educational visits at the

Biopark per year.

We offer a trip through nature where participants walk the Biopark in a unique and different way, this way, converting the educational visit into a transforming explorative and reflective reflection. In 2016, we developed 2 new different projects, which complement the educational visits: **Biologists in action** and **Ecochicos** (Ecokids).

These projects plan to follow students from the 4th, 5th and 6th grades through the Biopark linking specific contents of natural science and the animal's world, based on the country's curricular design. The general objectives are:

- To learn about the animal world: compare the key characteristics that distinguish the different groups.
- Identify the relationships of living creatures with the environment.
- Establish the relationship between humans, environmental modifications and their issues.
- Recognize the importance of conserving nature.

They are designed with a beginning, progression and ending, so that the students can experience a sense of oneness. Along the way, the guides use different teaching strategies to promote learning applications, which allow to them achieve their objectives. Some of these are observation, direct experiences, hypotheses formulation, group reflection, and the exploration of bio elements, among others.

We now understand, thanks to advances in neuroscience and neuroeducation, how the brain works, and the fundamental role of curiosity and emotion in the learning progress. It has been scientifically proven that the acquisition of knowledge, wherever, in classroom or in life, is not achieved only by memorizing or repeating over and over again, but also by doing, experimenting and moving. Learning is a progress that is related to the changes in an individual by neuronal, cognitive and behavioral levels, as a result of experience, allowing their adaptation to the environment. For that reason, we have decided to include **a direct experience with keepers and ambassador animals**. Approaching animals that are under human care allows curiosity, amazement, surprise and enthusiasm to be generated and therefore an interest to know more about the animal world.

Keepers are fundamental in the development of these activities, since they have an opportunity to share the knowledge they have about the animals under their care. Children and young people feel a certain fascination for keepers, who can talk about the animal's

characteristics because they know everything about them, even sharing the most curious information, helps generate astonishment and interest (Saunders 2017).

From the neurobiological point of view, these emotions make students pay attention, a central element for learning. They create meaning and are stored in the amygdala, a brain structure where emotional memories are stored. These then allow us to make better decisions since we will select a response based on our past experiences (Fox, 2013). This information that the neurosciences provides becomes crucial in understanding the importance of contact with nature and animals, because through these transformative experiences with students, we can develop committed citizens who make essential decisions regarding the care for Nature in the not too distant future.

Also, keep in mind what Dr. Carlos Javier Regazzoni tells us from the book entitled “El Cerebro que Aprende” (*The Brain that Learns*) with respect to what was mentioned above:

"The main emotional system of the brain is a group of structures that are massively



connected with the frontal cortex (dedicated, among other functions, to the resolution of problems). When a student is stressed, the connections between the emotional centres and the frontal lobe, which is critical for decision-making and planning, can be affected, which negatively impacts learning [...]"

(chap. 1, page 32). This is how we propose to

generate entertaining, **relaxed spaces for exploration, where we encourage humour and laughter (essential tools to release neurotransmitters) at key moments that allow learning** of the contents set out for each one of them at each of the visits.

We achieve this thanks to the joint efforts between the Keeper Team, the Educational Department and the Visitor Service Centre. This is how we develop and facilitate each of the planned activities during the various educational visits that are carried out at the Foundation, strengthening and multiplying our mission to protect Nature together.

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