

Survival strategies. Lectures from Plants and Animals.

“It is not the strongest of the species that survives, nor the most intelligent that survives. It is the one that is most adaptable to change.”

Have you wondering what characteristics helped organisms to “live”? In this science club, the students will have the opportunity to observe and to understand the morphological, physiological, and anatomical characteristics that animals and plants use to survive; characteristics that are necessary to be able establish and succeed on different environments.

Instructors information

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Workshop description

By studying botany and zoology, the students learn to identify the characteristics that allow the organisms to adapt to their environment, how those characters evolve through time and what forces and external factors influenced the directionality of those changes. The course will integrate seminars, practical exercises, laboratories (zoology anatomy and plant physiology), computer labs and final projects and presentations. Every day will include questions related to chose an academic and scientific career.

Day 1

Reasons to be a Scientist, What does a scientist do? (30 min)

Presentation and introduction (1 hour)

Biodiversity and adaptation. Seminar, lectures and exercises (3 hours)

Ecology. Interaction between organisms and their environment.

Physiology. How do organisms function in the world?

Closing session, open time to express opinions, experience and perspectives (30 min). *Groups will be formed and they will choose the topic for the final project.

Day 2

Where do the scientist work? (30 min)

Fieldwork and lab work (1 hour)

Scientific collections and preservation technics (Laboratory) (1 hour)

Physiology and Anatomy. How to learn more about them? (1 hour)

Measure morphological characters in preserved specimens (1.5 hours)

Day 3

Tetrapod evolution. Conquer of the land and the return to water. (4 hours)

Introduction. What is a tetrapod? Lectures and seminar

Relationships among species of vertebrates. Who is ancestor of whom?

Biology of extant tetrapod. Amphibians, reptiles, mammals and birds.

Character evolution

R class. Analyses of morphological characters (1 hour)

Day 4

Plants, from the desert to manglar.

Plants adaptations to the environment (30 min)

Photosynthesis. Is there more than one kind? (2 hours)

Photosynthesis laboratory, lectures and seminar

Transport of water in plants; studying plumbing in the trees. (2 hours)

Vegetal anatomy laboratory, lectures and seminar

Importance of vegetal physiology

Practical exercise to reinforced and integrated the subjects. (30 min)

Day 5

Rally and closure remarks

The biodiversity and its integration with the environment

Presentations by team (2 hours)