

A course for children during the school holidays on the theme of "Sustainable Development " at the Le Montet Botanical Gardens (Nancy - France).

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Introduction

The Nancy Conservatory and Botanical Gardens education service carries out a number of activities: guided tours, activities, exhibitions, talks, gardening and drawing courses, publications, designing educational resources and taking part in events.

During the school holidays, it organises "green workshops", courses for children lasting a week, during which they work in the mornings on a theme based on the plant world. The main aim is to learn about nature and to make children more aware of environmental protection and biodiversity. The approach is always scientific, recreational, artistic and sensory. Children can learn while having fun! Numbers are limited to 15 to give better supervision.

In February 2006, the theme proposed was sustainable development. The course, for children aged 8 to 12, was entitled "On ne va pas se Terre !", a play on the word "Terre", meaning "Earth", but sounding like "taire", meaning "keep quiet" – i.e. "We're not going to keep quiet!"). As the subject is a particularly complex one, we decided to work on certain themes such as biodiversity, water and recycling.

Aims

The main aim was to offer the children a few ideas for becoming young eco-citizens.

Overall aims: the courses help children to discover and learn more about their environment, to discuss ideas and express themselves on a theme, to think, create and spend a convivial week together

Learning objectives: this was not meant to be a botany course, but we introduced a few scientific ideas that participants may remember:

- Ideas concerning biodiversity
- Knowledge of a few threatened plant species
- The principle of biological control

Aims concerning sustainable development :

- To understand the threats to biodiversity
- To understand the notion of sustainable development
- To learn a few gestures to help save the environment
- To become aware of the work of the Conservatory and Botanical Gardens

Method

The aim was to offer a varied range of activities that were both educational and fun. We alternated between visits to the greenhouses, games, experiments and making things. The theoretical work was done at the start of the activities.

Each child was given an educational document that was used as a basic resource during the activity and was also taken home by the child so that he/she could have a written reminder, information and supplementary activities and a souvenir of the course.

How the course operated

Day 1 -> Introduction and making the children aware of the issues

Through a visit to the tropical greenhouses in the Botanical Gardens (and to the Orchid exhibition that was taking place at the time), the children were able to familiarise themselves with the Botanical Gardens, find out what they were and marvel at all the wonders of the plant world.

Children are always fascinated by the variety of shapes, colours and smells.

This fascination comes into play very quickly with youngsters, particularly when they see some of the most impressive plants, such as the orchids, palm trees, giant cactus and insect-eating plants.

The first stage before action is to raise awareness. This takes place through a sense of wonder and the feelings and emotions experienced in the face of something beautiful. We need to like something before we can understand it, and to understand before we act.

We spent some time in the greenhouse of the garden dedicated to plants under threat, and were able to explain what biodiversity meant. We were thus able to talk about the threats hanging over the plant world. We listed the causes of the loss of biodiversity: deforestation, pollution, natural catastrophes the introduction of foreign species, etc.

The useful plants greenhouse showed the children how important plants are, as they offer us a whole host of resources, such as foods and medicines. We need to protect them because they're beautiful, but also because they're useful and even vital to our lives!

The second part of the morning was given over to work on documents to gain an understanding of the dangers that exist on the planet, but also for man (access to water, to education).

We ended with an experiment on the recycling of materials. To help them understand what might happen to waste materials in nature, we buried various natural and other items in different pots: a lettuce leaf, a paper handkerchief, a drinks can and a glass bottle. This experiment is obviously not yet finished, but it will already have helped the children think about the possible impact of items left abandoned in nature.

Day 2 -> Water and recycled paper.

To help the children understand that water is a very precious resource, we carried out an experiment on water treatment. We talked about how we might obtain drinking water: decantation, filtering, etc.

Having talked about the problems of deforestation in the tropical greenhouses, we thought about what we could do to avoid wasting paper: printing on both sides, manufacturing recycled paper.

The children then made their own sheet of recycled paper and designed a vegetable print to decorate it.

We then had a team game in which the children had to answer a series of questions concerning their knowledge of or actions to help the environment.

Making recycled paper

Day 3 -> Recycling

We talked about waste sorting and recycling. Various recycled plastic objects were presented. We had asked the children to bring in some examples of recyclable waste. Having sorted through the mountain of recovered waste, they made their own personal models from recycled materials: little men, spacecraft and a whole range of toys were invented. Our children didn't need any expensive modern toys to have fun! A

few waste items, a bit of Sellotape and a tube of glue were quite enough to develop their creativity and keep them amused.

Day 4 -> Recycling. Planting

We finished our modelling with the recycled materials.

We wanted to plant a tree in the garden, but we were unable to because the ground was frozen, so we decided to plant some ferns in pots, which the children were then able to take home. This gave us an opportunity to explain the fact that some house plants eliminate the toxins in our home environment. This is a particularly important activity, as it allows the children to come into contact with soil and plants. It is also a symbolic action: planting rather than destroying, helping something germinate, seeing a plant grow, a plant that represents life, nature, the environment, a plant that offers us resources and helps us to breathe.

Day 5 -> Further games and an evaluation of the week

We played a little game to help the children think about their consumer habits. The children imagined that they were at the supermarket. What products are they going to buy? An eco-citizen should be looking to reduce packaging, choose products that have come from fair trading and eat fruit in season.

We also played a few other games: imagine the Earth in 50 years' time if we don't do anything today, find a slogan for the Earth, a calendar of ecological gestures.

We observed the results of the experiment on the decomposition of items in nature.

In the threatened plants greenhouse we read a story to help the children understand that every individual gesture can count. We took time to observe some threatened plants. The children could choose a plant and observe and draw it.

The week ended with a brief evaluation. We simply asked the children what they liked or didn't like, and what they had learned.

Each child left with his educational document, some souvenir photos of the week, the programme of future workshops, the plant and some objects made from recycled materials.

Evaluation

The first positive thing is the satisfaction of the children. Whatever they remember of the week, they had a lot of fun and enjoyed some very pleasant, convivial moments in the garden. Most of them had already visited or have registered for future courses.

Getting children to like the Botanical Gardens is already very satisfying!

The parents were also very pleased with the courses. In particular, they appreciated the quality of the supervision 2 instructors for 15 children, the beauty of the gardens, the varied programme and the documents that the children brought home.

The children's evaluations of the week provided us with little information about what they actually learned. All the children said that they really enjoyed the course. They all said that they liked everything (there was nothing they didn't like!). They particularly enjoyed the models made from recycled materials.

The parents were pleasantly surprised to sometimes see their children carrying on the activity in the afternoon: some of them emptied their bins in the sitting room to search for modelling materials!

One child said he'd learned nothing because he already knew it all, which is a good thing!

One child got a bit confused: "I learned that nature isn't protected".

One child (the youngest) had a mental block over the insect-eating plants that he had seen for a few minutes on the 1st day: "I learned that you shouldn't put your fingers in carnivorous plants!"

However, the course had its frustrations: it was too short for tackling difficult issues.

It feels rather pretentious to talk about sustainable development, especially with children of this age.

We were unable to clearly define the concept of sustainable development. The term itself is too complicated and abstract to be understood by children of this age. But that is just a simple problem of vocabulary.

The term “sustainable development” implies economic development that includes respect for man and the environment. It is the concept of development that is not easy to explain.

The terms “environment” and “biodiversity” were assimilated.

It would be more accurate to say that we ran a course on the environment or eco-citizenship.

We will be offering another course on this theme during the summer holidays for slightly older children. Other problems linked to the planet will be covered: the greenhouse effect, global warming, deforestation...

In addition, during each course, we will be attempting to offer activities to raise children’s awareness of sustainable development and biodiversity: explaining the threats to the peat bogs during a week on carnivorous plants, building insect shelters during a course on “creepy-crawlies”, studying biodiversity through the example of a fruit family in a course on citrus fruits, etc.