



Botany

SEQUENCE 1

Age group	8-10 y.o
Prior knowledge	None
Material needed	Plants collected, identification key
Subjects	Sciences - Arts
Skills involved	Create a scientific drawing in the style of Maria Sibylla Merian, identify a plant using a determination key, and artistically represent a plant.
Time to carry out the sequence	Sequence to be carried out over several days

Step 1: Introduction

Explain to the pupils that they are going on an excursion (to a park or forest) near the school.

Ask them what they think they will see on the site, and list familiar plants or trees (orally or from photos).

Decide collectively how the class will be organised (pairs, groups of 4-5) and what will be collected (for example, for each group, 4 or 5 different leaves and or branches).

Remind them of the safety instructions for school excursions and respecting the environment.

It may be useful to conduct a site reconnaissance before the excursion (safety, possible presence of protected species) to define the working perimeter, etc.



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Step 2: Excursion

Collect leaves or parts of plants (leaves, fruit, branches) according to instructions.

Step 3: How to store our samples

Work together to find ways of preserving samples and discover the drying/pressing technique. Explain what a herbarium is.

Step 4: Discover the box

Let the students discover the items in the box.

- ➔ The box offers an experiment based on two approaches (scientific and artistic) and two activities (experimentation and illustration). The first activity involves creating a creative illustration of plants using the autotype method. The second activity is to produce a scientific drawing of plants in the style of Maria Sibylla Merian.

Step 5: What have we collected? – vocabulary

Once the artist's herbarium has been created, it is necessary to try and determine what has been collected.

Draw the students' attention to the fact that they need to use precise vocabulary to describe the leaves they have collected.

To check that the students have mastered the vocabulary, place them in pairs and ask one of the students to choose leaves and describe them to their classmate, who will have to find them in the artist's herbarium.

Step 5: What have we collected – identification key

Ask the pupils how we can differentiate the plants.



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Introduce the identification keys to them: Explain how it works and how to use them.

An identification key, also known as a taxonomic key, is useful for identifying unknown organisms (animals, plants, fossils). The teacher will guide the students by showing them different ready-made determination keys for naming plants.

Now, the artist's herbarium can be completed by adding the name of the plants.



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SEQUENCE 2

Age group	10 - 12 y.o.
Prior knowledge	None
Material needed	Plants collected during the excursion, identification key
Subjects	Sciences – Arts
Skills involved	Create a scientific drawing in the style of Maria Sibylla Merian, identify a plant using a determination key, and artistically represent a plant.
Time to carry out the sequence	Sequence to be carried out over several days

Step 1: Introduction

Start with a dynamic introductory activity, such as a question-and-answer game about plants and their different parts.

Announces the artist's herbarium project, explaining that the pupils will become nature explorers.

Remind them of the safety instructions for school excursions and respecting the environment.

It may be useful to conduct a site reconnaissance before the excursion (safety, possible presence of protected species) to define the working perimeter, etc.

Step 2: Excursion

Distribute observation books and encourage students to explore their environment (school garden, park, etc.) to find and observe different plants.

Ask students to draw the plants they find, focusing on the details of the leaves, flowers, stems, etc. Encourage students to ask questions about the plants they find.



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Step 3: Research and discovery

Organise a classroom research session where students use books (you can go to the library to rent some books if needed), online botanical guides and other resources to identify the plants they have observed.

Invite students to share their findings and information about different plants.

Step 4: Discover the box

Let the students discover the items in the box.

- ➔ The box offers an experiment based on two approaches (scientific and artistic) and two activities (experimentation and illustration). The first activity involves creating a creative illustration of plants using the anatype method. The second activity is to produce a scientific drawing of plants in the style of Maria Sibylla Merian.

Step 5: Introduction and creation of an identification key

Explain to the pupils what a determination key is: a tool that uses a series of binary questions to guide the user towards identifying a plant.

Show simple examples of determination keys for other objects, such as stuffed animals or everyday objects, to illustrate the concept.

Creating a determination key is a complex task, so we suggest you select a few plants (4 or 5; some similar ones; choose tree leaves, for example) and try to create a key as a class.

The plants must be carefully selected in advance by the teacher. If possible, give a copy of each sheet to each group of 2 students and/or place the sheets on blackboards for all to see.



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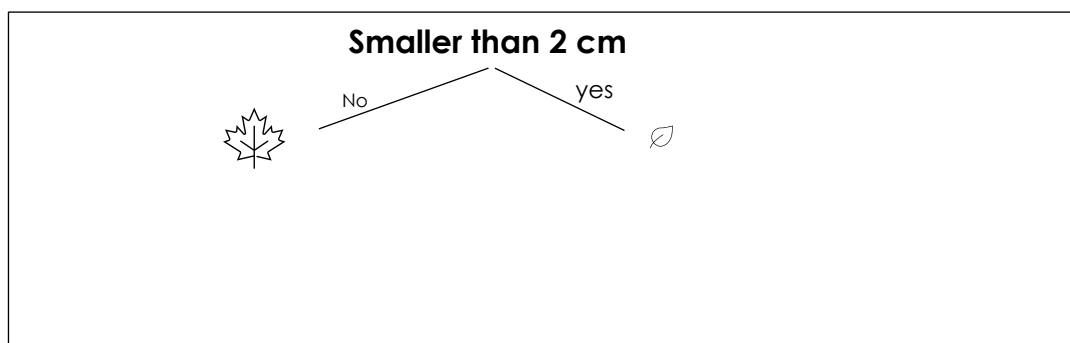
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We ask students how they might describe their plant: words like big, small, prickly, sweet, green, sweet-smelling, etc. come to mind. Students are then asked to use these criteria to draw up a tool for separating plants and finding their names without making mistakes: the determination key.

The first criterion that will appear is probably the size of the leaves. Ask the students how to compare the size of the leaves. They will suggest measuring. The first criterion can, therefore, be established according to size (for example, smaller than 2 cm: yes/no).

As you determine the criteria, draw them on the board and place the plants.



Keep finding relevant criteria to differentiate other plants, and build up your key as you go along.

Encourage students to touch and even smell the plants (be careful and explain that some plants are toxic, so don't taste them!).

When your determination key is ready, distribute an A3 sheet to students and ask them to reproduce it to keep a record of their work (if you have a copy of plants per person, they can glue them. Otherwise, they can make a drawing).



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Creating a determination key will enable students to develop their observation, classification and problem-solving skills. It also reinforces their understanding of botanical characteristics and ability to identify different plants logically and methodically.

Step 6: Testing of the identification key

To check the effectiveness of the key, we invented a telephone call during which a pupil who receives the call has to find the name of the plant by following the descriptions of his interlocutor (the teacher) with the help of the board. "Hello Marie?" "I'm up on the hill near the school, and I've found a plant with very short leaves that stings. Can you find out its name for me?"

Step 7: Use of the determination key

The determination key created does not necessarily contain all the plants used in the herbarium. For this reason, the teacher will guide the students by showing them different ready-made determination keys for naming plants.

Now, the artist's herbarium can be completed by adding the name of the plants.



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