



Pigments of the Flowers

SEQUENCE 1

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| Group | 6-9 y.o. |
| Prior knowledge | None |
| Material needed | Box Pigments of the Flower, laces, white paper, kettle for boiling water, pipettes, glasses. |
| Subjects | Pigments of the Flowers |
| Skills involved | - Simple use of a kettle - Transfer of liquids into various test tubes and glasses |
| Time to carry out the sequence | 1 hour |

Step 1: Introduction

For a short introduction to the subject, you can mention many things in nature for which we should be thankful. One of them definitely has to be flowers. There are many types of flowers which we see in our environment. The beautiful fragrances and flowers enhance the beauty of our planet Earth.

Alternatively, you can ask some questions:

- 1) What happens when you pound (rub) a coloured flower on a white cloth?
- 2) How cloths can be coloured with all-natural items using different flowers and leaves?



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Step 2: Initial concepts

If the subject has not yet been discussed with the pupils, it might be interesting to gather their initial ideas by asking them questions like: "In your opinion why do flowers have such wonderful colours? how can we extract these beautiful colours?"

Take note of the students' hypotheses so you can return to them later.

Step 3: Discovering the content of the box

This step aims at having pupils look at the box content: the material and the notice. Children should have enough time to discover the box and become familiar with it.

Step 4: Extraction of pigments of the flowers

With the help of the materials in the box, you can extract different pigments from the flowers. This experiment can be repeated at various times of the year by indulging the various blooms and different colors of the leaves.

Step 5: Extension/reinvestment

Form several teams and introduce laces in different test tubes.

Using different pigments from the flowers, we can paint fabric in just the same way as we paint the laces.

Safety measures:

- The transfer of hot water can be risky and it requires special attention
- These flowers are not edible so make sure that they don't taste these pigments.



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SEQUENCE 2

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| Group | 9-12 y.o. |
| Prior knowledge | Concepts of the different types of soil |
| Material needed | The Pigments of the Flower box, white paper, kettle for boiling water, pipettes, glasses, vinegar, lemon, baking soda. |
| Subjects | Pigments of the Flowers are influenced by the soil |
| Skills involved | - Simple use of a kettle - Transfer of liquids and substances into various test tubes and glasses using pipettes. |
| Time to carry out the sequence | 1 hour |

Step 1: Research

Ask the students if soil can affect flower colour (based on their knowledge or by trying to guess). If they have no ideas, do a little research. This is also an excellent time to learn how to do a good internet search (use keywords, search engines, and trust a source).

Step 2: Discover the box

Give the students time to observe the different parts of the box and ask them what they think can be done with the material.

Create the box using the materials provided.

Step 3: Extraction of pigments of the flowers and pH influence

With the help of the materials in the box, you can extract different pigments from the flowers. You can study colour change by adding an acid (vinegar, lemon) or alkaline substance (baking soda).



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Baking soda is a leavening agent used in baked goods like cakes, muffins, and cookies. It's a white crystalline powder that is naturally alkaline. Baking soda becomes activated when it's combined with an acidic ingredient and a liquid.

Step 4: Extension/reinvestment

From this sequence, you can conclude that soil can affect the colour of the flowers. Red or pink blooms result from neutral or basic soil (pH 7 and above), whereas blue blooms indicate acidic conditions (pH less than 7)

It might be an exciting project to plant flowers at homes and in our neighbourhood to beautify the place and bring happiness and joy for everyone passing by and to study the changing colour according to the soil characteristics.



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