Lesson: Exploring Natural Dyes through Recycled Newspaper Pots

Grades: 5-6

Objective:

Students will explore the concept of natural dyes and sustainable gardening practices by creating recycled newspaper pots and using local plants known for their dyeing properties. They will also learn the traditional use of natural dyes by Indigenous Peoples and reflect on their experience throughout the process.

Skills:

- Make observations and predictions to interpret our local environment
- Learn and understand Indigenous perspectives and traditional knowledge
- Communicate ideas and observations with peers

Concepts:

- Understanding the environmental impacts of plastics
- Understanding and explaining the importance of recycling
- Understanding the traditional techniques of using natural dyes

Materials:

- Old newspapers
- Pair of scissors
- Large used tin can (cleaned)
- ~6oz (175ml)
- Native plant seeds for dyeing
- Planting soil
- Classroom stock of fabric or students' own fabric/clothing items
- Large pots for boiling water (one for each dye color)
- Stove or hot plate for boiling water
- Strainer (optional)

Background Information:

Natural Dyes and Traditional Techniques:

Throughout history, humans have used natural materials like plants, minerals, and even insects to dye fabrics and create colorful textiles. These natural dyes were widely used by ancient civilizations, including Indigenous Peoples, to add vibrant colors to their clothing and other textiles. Traditional dyeing techniques were passed down through generations, often involving native plant species and specific parts of plants to achieve different colors.

First Nation's People and Natural Dyes:

For centuries, the indigenous people of various regions, including the First Nation's People in North America, used natural dyes obtained from plants and other sources for various purposes, including clothing, baskets, and artwork. The knowledge of these traditional dyeing techniques was passed down through generations, reflecting the deep connection between indigenous cultures and the natural world.

Environmental Impact of Plastic Pots:

Plastic pots, commonly used for gardening, are known to have a negative impact on the environment. They are often made from non-renewable resources, and their production and disposal contribute to pollution and waste. Plastic can take hundreds of years to decompose, leading to long-term environmental problems. As a result, finding eco-friendly alternatives, like recycled newspaper pots, can help reduce the environmental burden.

Recycled Newspaper Pots:

Recycled newspaper pots are an excellent eco-friendly alternative to plastic pots for starting seeds and growing seedlings. These pots are biodegradable, which means they can be transplanted directly into the garden, allowing the newspaper to decompose naturally in the soil. Making these pots is a simple and cost-effective way to promote sustainability in gardening practices.

Procedure:

Introduction *(10 minutes)**:***

- Begin the lesson by discussing the concept of natural dyes and their historical use by different cultures, including the First Nation's People.
- Explain the environmental impact of plastic pots and introduce the idea of creating recycled newspaper pots as an eco-friendly alternative.

Activity 1: Making Recycled Newspaper Pots *(20 minutes)**:***

- Provide each student with old newspapers, a pair of scissors, and a large tin can.
- Guide the students through the steps to create the recycled newspaper pots, following these instructions:
    - On the end closest to you, lay the can on its side across the strip of newspaper.
    - Leave about 1 inch hanging off the end of the can.
    - Roll the can along the newspaper until it's loosely wrapped all the way around. (Loose being key for easy removal of the can later.)
    - Fold the edges of the newspaper down over the can and work your way around in a circle until all the edges are folded over firmly.
    - Flip the can over so the folded edges are now on the bottom. Press the can down on the folds to really crease the edges against the bottom of the can.
    - Slide the can out and you've got a thrifty and biodegradable seedling pot!

Activity 2: Planting Native Seeds *(15 minutes)**:***

- Introduce the native seeds known for their dyeing properties and discuss the different colors they produce.
    - **Reds/Pinks:**
        - Hollyhock, Lupins, Dyer's Coreopsis, Madder, Red Columbine
    - **Yellows:**
        - Heather, Rhubarb, Goldenrod, Marigold, Dyer's Coreopsis, Calendula
    - **Greens:**
        - Heather, Rhubarb, Goldenrod, Lupin, Elderberry
    - **Blues:**
        - Woad, Indigo, Elderberry
    - **Browns:**
        - Lupin, Dyer's Coreopsis
- Instruct the students to plant their chosen seeds in the newspaper pots they just created.
- Emphasize the importance of proper care and watering to help the seeds grow into healthy plants.

Note:

The planting of native seeds can be done as a year-long process, where the students plant native species into their newspaper pots and they can watch as they grow and develop in the classroom. When the plants are developed as a class you can move on to activity 3 and create natural dyes from plants that were grown

in the classroom. OR you can have the students create the newspaper pots for their own personal plants and skip straight to activity 3 with pre-purchased native plant species.

Activity 3: Boiling Plants for Natural Dye *(30 minutes)**:***

- Divide the class into groups based on the colors they wish to dye their fabric.
- Boil a large pot of water for each dye color and add the specific plant parts as follows:
    - Different parts of these plants are used to create dyes, including the roots, stems, bark, leaves, flowers, and fruits. These plants are used for dyeing materials such as cotton, linen, wool, and silk.
    - Boil a large pot of water (one for each different dye colour being made) and add the plant to the water to simmer for 30-60mins.
    - There should be enough plants that for each piece of fabric being dyed, there is an equal weight of plants being added to the water.
- Allow the plants to simmer for 30-60 minutes.
- Strain the water or remove the flowers before adding the fabric or allowing the fabric to soak.

Activity 4: Dyeing Fabric *(15 minutes)**:***

- Instruct each group to add their fabric to the dye pot and let it soak for 30 minutes.
- After dyeing, wash the fabric in warm water until the water runs clear.
- Advise students not to let the fabric dry under direct sunlight to prevent color fading.

Reflection *(10 minutes)**:***

- Provide prompts for students to reflect on their experience with the entire process, including making the eco-friendly pots, growing the plants, and dyeing the fabric. Some prompts include:
    - *Was it easy to make the eco-friendly pot?*
    - *What are your thoughts on newspaper pots compared to plastic ones?*
    - *Was it hard or easy to grow the plants from seeds?*
    - *Did the fabric become as colourful as you had expected it to after dyeing it in this manner?*
    - *What do you think about the fact that at one time this kind of method would be a normal and regular manner of dyeing clothes for Indigenous People?*

- Allow students to share their reflections with the class if they are comfortable doing so.

Conclusion *(5 minutes)**:***

- Summarize the key points of the lesson, emphasizing the benefits of using natural dyes and sustainable gardening practices.
- Encourage students to continue exploring eco-friendly practices and appreciate the traditional knowledge of First Nation's People in dyeing techniques.