

Key Descriptions of learning within Progression Step 3:

I can recognise that changes in materials affect their properties and uses under different conditions.

I can describe the impacts of science and technology, past and present, in my everyday life.

The Four Purposes: Ambitious, capable learners who:

- Set themselves high standards and seek and enjoy challenge;

Enterprising, creative contributors who:

- Express ideas and emotions through different media;

Integral skills: Creativity and Innovation

Prior Learning: Discuss if the children have any experience of dyeing wool/fabric before. Recap historical periods of time studied to activate any prior knowledge.

Inquiry Type(s): Observation over time (minutes/hours)

Common Misconceptions: That items/products are just that colour, without going through a process first.

Science & Technology Provision Map - Session 6

Science & Technology Statements of What Matters:

- Being curious and searching for answers is essential to understanding and predicting phenomena.

- Matter and the way it behaves defines our universe and shapes our lives.

Key Links to other Statements of What Matters:

Humanities:

- Our natural world is diverse and dynamic, influenced by processes and human actions.

Expressive Arts:

- Exploring the expressive arts is essential to developing artistic skills and knowledge and it enables learners to become curious and creative individuals.

- Creating combines skills and knowledge, drawing on the senses, inspiration and imagination.

Inquiry Question(s) / Big Idea:

Dyeing wool using natural dyes

How to develop Science Vocabulary:

Wools, sheep, natural resources, yarn, dye, mordants, extracting,

Resources: Raw wool or wool yarn, natural dye sources (e.g., onion skins, beetroot, spinach, turmeric, berries) Mordants (e.g., vinegar, alum, salt) Large pots for boiling water, Water, Spoons or sticks for stirring, Rubber gloves, Aprons or old clothes to protect students' clothing, Strainers or colanders, Measuring cups, Bowls or buckets for soaking wool

Be Safe!

- Introduce the natural dye sources you will be using and explain how each one can produce different colors.

- Discuss safety precautions, such as wearing gloves and aprons, and handling hot water carefully.

Careers/Work-related Experiences (CWRE) / Developing a range of partnerships and engaging with science and technology professionals and experts (STEM Ambassadors) / comparing past and present (and future):

Famous Textile Artists:

Anni Albers (1899 – 1994)

Louise Bourgeois (1911 – 2010)

Itchiku Kubota (1917 – 2003)

Peter Collingwood (1922 – 2008)

Citizen Science: N/A

Cross-Curricular Skills/Learning Experiences:

Literacy: Listening: I can listen to, identify and use key words to understand the general meaning and ideas which are implied.

I can listen to and understand information about a variety of topics, summarising the main points

WMS1 & Explaining their thinking either verbally or in written form:

By being encouraged to use logic, evidence and creativity, learners will be supported to inquire into and apply scientific knowledge to further understanding of how our world works. Pupils will explain their thinking verbally whilst following the instructions and completing observations over time.

Practical Learning Opportunities....Exploration and experience of the world through inquiry, including fieldwork, investigating environments indoors and outdoors in a safe and systematic way:

Pupils will activate any prior knowledge by discussing the history of wool dyeing. They will learn about the process of dyeing wool using natural dyes. They will explore how different natural materials can be used to dye wool and understand the basic chemistry behind the dyeing process.

Begin by discussing the safety tips.

Prepare the wool.

Extract the dye.

Dye the wool.

Rinse and dry.

Reflect and discuss.

Begin planning art project using the wool. This hands-on activity will also help them appreciate the intersection of science, art, and history.

Progression: Pupils will follow the steps to complete the wool dyeing task. They will then begin planning their artwork using the dye.

Assessment Opportunities (TAPS?):

By the end of the lesson, pupils should understand the basics of dyeing wool with natural materials, the importance of mordants, and how different natural sources can produce various colours.

Next Steps: Plan and create a piece of artwork using the dyed wool.