



## Stage 7: Making a non-food product

### Learning intention:

To understand how water is transported in plants

### Stage overview:

In this stage, the children will understand the function of the stem and learn how water is transported in plants by making a non-food product that they can sell in their farm shop alongside the food product they will make in the next stage. The children will set up a simple observation to explore what happens to their white carnations when they are placed in coloured water and then design a product that they could make using their pressed, coloured flowers.

### Materials needed:

- White carnations (one for each child)
- Food colouring in a range of colours
- Test tubes or small vases, jars or pots (one for each child)
- A stick of celery
- Magnifiers
- Kitchen towel

### Presentation notes:

Slide 2: Introduce the task	<ul style="list-style-type: none"> <li>- Explain that you are going to be making a second product to sell in your farm shop so that you can appeal to more customers.</li> <li>- At the same time you are going to be learning about how water is transported within a plant.</li> </ul>
Slide 3: Partner talk	<ul style="list-style-type: none"> <li>- Start the children's thinking by asking them to discuss the function of a plant's stem and how they think water is transported in a plant.</li> <li>- Ask them to write their ideas on post it notes and stick them on the working wall.</li> </ul>
Slide 4: Drawing accurate diagrams	<ul style="list-style-type: none"> <li>- Explain that we will be investigating how water is transported in two different stems: a carnation stem and a celery stalk.</li> <li>- Show them to the children and ask them to draw and label a diagram of a stem.</li> </ul>
Slide 5: How is water transported in plants?	<ul style="list-style-type: none"> <li>- Ask the groups to think of ideas for how we could investigate the question: how is water transported in plants? Take feedback.</li> <li>- Explain that by placing our plant stems in coloured water and observing what happens closely, we can answer the question.</li> <li>- Model how to set up the investigation using the celery stick and ask the children to set up their carnations in water of their chosen colour.</li> </ul>

Slide 6: Observation	<ul style="list-style-type: none"> <li>- Once the petals have changed colour, ask the children to observe their carnations closely using the magnifiers and write what they notice and why they think it has happened.</li> <li>- You could incorporate an art lesson here to give the children the opportunity to study and paint their flowers in detail. This would link well with a study of Georgia O’Keeffe’s enlarged flower pieces.</li> </ul>
Slide 7: Observation	<ul style="list-style-type: none"> <li>- Using a kitchen knife, slice up the celery so that every pair has a cross section and a piece that has been cut lengthways.</li> <li>- Give pairs the opportunity to observe their pieces of celery using the magnifiers, draw a detailed, labelled diagram and explain what they can see.</li> </ul>
Slide 8: How water is transported in plants	<ul style="list-style-type: none"> <li>- Explain that inside the stems are little tubes which transport the water that is taken up by the roots to the other parts of the plant like little straws. Explain that we can see these the most clearly in the celery cross section as they have been dyed by the coloured water as it has travelled up the stem and look like little dots.</li> </ul>
Slide 9: Flower pressing	<ul style="list-style-type: none"> <li>- Explain that you are now going to press the coloured flowers that you have dyed so that their colourful petals can be preserved.</li> <li>- Once the petals have dried, we will be using them to make our second product for our farm shop.</li> <li>- Model how to place the flowers between two sheets of folded kitchen towel and then place several heavy books on top of them. Remember to change the blotting sheets at regular intervals.</li> <li>- The flowers will take two weeks to fully dry out.</li> </ul>
Slide 10: Product design	<ul style="list-style-type: none"> <li>- Ask the children to design a product to make using their pressed flowers.</li> <li>- Suggest that they could make a greetings card, a little paper box or a piece of art. The children might like to write out the plant poems they wrote in stage 2 and use their pressed flowers to decorate the page.</li> <li>- As an alternative, ask the children to take photographs of the dyed flowers and add them to the ‘Pic Collage’ iPad application. The children could cut each flower/petal out using the scissor tool and arrange on the page.</li> <li>- Then they could add and format the text of their Stage 2 poem and arrange it on the page using the layout tools.</li> <li>- The completed image could be saved and printed out as a poster or greeting card.</li> </ul>

### National Curriculum Links:

Subject	Topic	Objective
Science	Plants	<ul style="list-style-type: none"> <li>- Investigate the way in which water is transported within plants.</li> </ul>
	Working scientifically	<ul style="list-style-type: none"> <li>- Setting up simple practical enquiries, comparative and fair test.</li> <li>- Making systematic and careful observations.</li> </ul>
Computing		<ul style="list-style-type: none"> <li>- Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.</li> </ul>
Design and technology	Design	<ul style="list-style-type: none"> <li>- Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or group.</li> </ul>