

Science and Technology in Early Years

Continuous Provision: A Guide for Subject Leads

- How do you spot when quality teaching and learning is occurring in Continuous Provision?
- How should adults respond to children when they are learning in provision?
- Why is child-initiated play and learning so powerful?
- Where are you most likely to see science and technology in the Early

Science and technology are covered across the whole of continuous provision, but are richest in the following areas:

Technology

Blocks and Loose Parts Play	Shape, angles, stable, non-stable, ramps, plan, design, build, evaluate, speculate, re-design, fine and gross motor play, weights, counterweights, qualities and behaviour of materials. Community Playthings blocks are cut specifically to offer children the opportunity to learn about angles, fractions, halves, doubles and movement.
Small Construction	Fine Motor, design, construct, evaluate, speculate, re-design, de-construct,
Design Technology	Skilled use of tools, (including scissors, pencil and ruler, tape measure, pencil sharpener, tape measure, stapler) fasteners, (including treasury tags, split pins, different types of glue, Sellotape, masking and parcel tape, paper clips, elastic bands, pipe-cleaners, wire, ...) and materials for collage and materials (plastics, cardboard and tin/foil) for box modelling.
Computing and programmable toys	General skills, especially for Word and the ability to effectively programme toys and sometimes include being able to understand simple fractions and angles.
All of the above, plus wheeled toys outside	Outside, we see opportunities to practice all of the the skills above, but often on a larger scale. Wheeled toys and heavy duty trucks give children an insight into simple axels, steering columns and balance.





Jack is testing whether his truck travels faster when it is full of bricks or empty, when using a ramp. He planned this activity and devised the fair test himself.



Ruby and Ruby are using an architect's slope to design their new kitchen before making it out of blocks

This play came as a result of a learning episode revolving around a child who was upset about having to move house. We created an estate agents, put the home corner up for sale and went house hunting, first to the real estate agents in Saltaire and then after a pretend phonecall to a Mum, a walk to her house in Saltaire for a viewing. Having showed us all 4 floors of her house, our offer of £5500 (fiftyfive hundred quids) was turned down, we thought perhaps we might get more for our money if we turned the outdoors music frame into a house and moved there instead. On moving day, we packed everything into huge boxes. Then we discovered we couldn't lift them or put them on our trolley, so we re-packed into smaller boxes. The boys did most of the hauling and the girls did most of the unpacking and re-organising. Later, once the home corner was re-instated, the children enjoyed moving house to the block area and creating new kitchen designs.





Science

<p>Dough/baking (Woodland Kitchen)</p>	<p>Mixing, change, change over time, irreversible and reversible change, heating, cooling, whisking, air bubbles, consistency, melting, boiling, baking, powder, solids, liquids, fats, oil, water....</p>
<p>Powder Painting</p>	<p>See example below</p>
<p>Water Area (Water Area outdoors)</p>	<p>How water behaves, moves, seeps, runs off, floating, sinking, evaporating, drying, displacement, freezing, steaming, heating, mixing with various other substances such as lavender oil, food colours, bubbles, leaves, buttons. Droplets, skimming, ripples, whirlpool, waves and so on</p>
<p>Art Area – mixing and exploring colour Observational drawing and painting</p>	<p>Experiment with oil and chalk pastels and how they each behave, painting as explained below. Observational drawing requires skilled and prolonged observation skills, honed with practice and support from a role model.</p>
<p>Blocks and Loose Parts</p>	<p>(weighting, counterweighting, materials)</p>
<p>Small world, including in the sand area Large small world outside)</p>	<p>Opportunities to think about different habitats and climates in a scientific way. Small worlds might include Space, coasts, forests, desert, pole, jungle, farmland and so on</p>
<p>Science investigation area (Science Lab)</p>	<p>Our is about dinosaurs, fossils, precious stones – it could be about anything scientific – mini beasts, magnifying, magnets, light, colour, ...</p>
<p>All of the above, outside including weather and seasons</p>	<p>Weather should be measured as part of the ‘Daily Dash’ of maths, including measuring wind using compass points, measuring rainwater in ml, temperature in °C, and general conditions in words. Children need to know what to look out for in terms of clues that show us which season we are in.</p>

Children need to be trained to use and hone highlighted skills in these areas. They need rich vocabulary and time to explore, experiment and to investigate how things work, or how they might be put together.

Example

Powder painting:

- 1.) Scientific process, mix a water and soluble to form usable paint that doesn't drip or isn't too stiff/dry to work with – new vocab: viscosity
- 2.) Investigate how colour works and experiment with 3 primary colours plus white which can make every other colour and their shades
- 3.) Use a dry powder background onto which you can instantly add a wet foreground.
- 4.) Leave the painting over night to dry before embellishing with paper, oil pastel, black line or glitter etc

In the photographs below, you can see evidence of skills development, both in the way David is holding his brush and the additional colours he knows how to make (orange, purple and green).

