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| **Understanding The World – Technology -Small Steps towards learning, understanding and developing skills sequentially** | | | |
| **Range/Knowledge** | | **Positive Relationships** | **Enabling Environments** |
| 1. | The beginnings of understanding technology lie in babies exploring and making sense of objects and how they behave (see Playing and exploring, Thinking creatively and critically) | See characteristics of effective learning in ‘Playing and Exploring’ and ‘Thinking Creatively and Critically’ Section | |
| 2. |
| 3.  PG | • Anticipates repeated sounds, sights and actions, e.g. when an adult demonstrates an action toy several times  • Shows interest in toys with buttons, flaps and simple mechanisms and begins to learn to operate them | • Comment on the ways in which young children investigate how to push, pull, lift or press parts of toys and domestic equipment.  • Play with increasing range and complexity of cause and effect toys – copying what adult does and how adult makes toys move/activate etc.  •Encourage child to take adults hand, finger, etc to hold it and move the adults hand first – as some children may need to/ seek to control the adults hands etc. before trying on their own  •Model and encourage the use of simple words that describe movements needed to make toys work/move or activate e.g push, press, on, off, up, down, light, copies or names sounds made e.g. ‘beep’, ‘vroom’, ‘mama’  • Sit alongside children to demonstrate how they can access a wider range of books with flaps and moving parts and those with sound elements and touch/feel elements. Encourage children to use the books and move the parts gently and carefully, modelling simple words to describe what happens as they interact with the different parts of the book  • Comment on the ways in which young children investigate how to push, pull, lift or press parts of toys and domestic equipment.  • Talk about the effect of children’s actions, as they investigate what things can do  • Give lots of opportunities for children to explore, handle and access toys and equipment and simple domestic appliances that have cause and effect actions/possibilities e.g. the vacuum, ipad camera, or hairdryer – always be aware of safety here though and teach children how to stay safe using such appliances and equipment.  •Allow children to request, look for and seek out their ‘favourite’ toys/appliances and technological equipment and observe whether they remember/anticipate what happens when they use same movements as before.  •Give opportunities for children to show others how they can make toys work/move or activate. | • Talk about the effect of children’s actions, as they investigate what things can do.  • Have available robust resources with knobs, flaps, keys or shutters.  • Incorporate technology resources that children recognise into their play, such as a camera, toy phones, torches (be careful with safety!) etc.  • Use sensory room sessions regularly to enable children to experience a range of different equipment with variety of actions/outcomes e.g. lights, sounds, bubble machine, water toys etc.  • Provide children with hand held toys to use and those with magnets so they can explore different ways to make things move, make sound or lights e.g. magnetic fishing rod games, magnetic blocks, battery operated hand held wands, lights, spinning toys – ensure safe use of these toys demonstrating carefully and age appropriate safety features included/checked.  • Ensure different kinds of toys, tools and equipment available in the water area for children to explore different ways water can move – whisks, funnels, water screws, squeezy bottles and pipettes for them to explore suction etc. in their free play. Use simple words to explain, model and demonstrate what happens as children interact with the water in different ways.  • Provide age appropriate and age safe magnetic toys e.g. ‘Melissa and Doug type toys’ for children to explore how magnets can move things and make things ‘work’ or ‘connect’ – e.g. magnetic trains, bricks, fishing rods. |
| 4.  N1 | • Seeks to acquire basic skills in turning on and operating some digital equipment  • Operates mechanical toys, e.g. turns the knob on a wind-up toy or pulls back on a friction car  • Plays with water to investigate “low technology” such as washing and cleaning  • Uses pipes, funnels and other tools to carry/ transport water from one place to another | •Support children in exploring the control technology of toys, e.g. toy electronic keyboard.  • Talk about digital and other electric equipment, what it does, what they can do with it and how to use it safely.  • Talk to children about “low technologies” such as washing and drying, transporting water and using water and magnets to make things “work”. | • Provide more complex range of safe equipment to play with, such as torches and walkie-talkies, more intricate magnetic toys and cause/effect toys.  • Let children use machines like the photocopier or i-pad to copy/photograph their own pictures and pieces of work/friends.  • Provide a range of materials for children to “stain” and have a go at washing, rinsing and drying outside in the sunshine.  • Provide a range of pipes, funnels, containers, water wheels and water for children to play with – using a wider range of words to explain the functions, techniques and actions that occur as children use these pieces of equipment with growing control for different purposes.  •Encourage children to describe and talk about what they see/hear/observe happening and make predictions about what they expect to happen next or if….then…..  •Use photographs and objects of reference to encourage children to talk about technology they use at home in different rooms and what it does e.g. washing machine, hairdryer, lamps, electronic toys etc – from books/memory/recall/previous experience etc as well as direct use. |
| 5.  N2 | • Knows how to operate simple equipment, e.g. turns on CD player, uses a remote control, can navigate touch-capable technology with support  • Shows an interest in technological toys with knobs or pulleys, real objects such as cameras, and touchscreen devices such as mobile phones and tablets  • Shows skill in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movements or new images  • Knows that information can be retrieved from digital devices and the internet  • Plays with a range of materials to learn cause and effect, for example, makes a string puppet using dowels and string to suspend the puppet | • Support and extend the skills children develop as they become familiar with simple equipment, such as twisting or turning a knob.  • Support children to be curious in grappling with cause and effect, e.g. learning that pulling a string may make a puppet arm lift.  Draw young children’s attention to pieces of digital apparatus they see or that they use with adult supervision- e.g. computer, i-pad, digi-blue video cameras, metal detectors, microscopes, overhead projector lamp, light table, i-pad apps e.g. ‘seek’.  • Talk to children about their uses of technologies at home and in other environments and around school to begin to understand what they already know about and can do with different technologies  that are operated in different ways – explore if they can explain mechanisms, operational features and energy sources e.g. battery, electric etc.  • Ask open-ended questions and have conversations about children’s interest in technological toys to enable children to learn about different technologies. | • When out in the locality, ask children to help to press the button at the pelican crossing, or speak into an intercom to tell somebody you have come back, use the electronic doors at Nursery and the phone intercom system to demonstrate how useful this is and how it keeps us safe.  • When in the garden, the forest, the wider community and on trips to places such as the park, encourage children to take photographs and use mobile apps of things that interest them, ready to revisit later – e.g. in the garden and forest use ‘SEEK’ app to photograph and identify plants, insects and animals. At the beach photograph shells and seaweeds to find out their names etc.  • Provide a range of materials, toys and equipment that enable children to explore cause and effect – cross curricula activities etc.  Digi video cameras  Bebots  Digital microscopes  Metal detectors  Magnets and magnet toys and magnetic construction equipment  Gears and pulleys etc. to explore how cause and effect works to help us problem solve and create  A wider range of water toys e.g. water screws, science of water toys  Sensory Room equipment – moving lights and sounds and combining these for different effects  Smartboard equipment for drawing and sound recording  Coomba and CD players for sound recording  Various listening and recording toys linked to C&L development and speech – in Listening baskets – mini recorders/microphones etc.  Tinkerlab – electromagnetism lights, microscopes,  Torches and prisms, simple box cameras, light boxes and light tables for exploring how we can use lights in our play and work to create, explore and solve problems.  Historic toys/appliances to work out how they worked and what they were for e.g. bed warmer, poss stick, knife sharpener, egg poacher and ‘older’ technological equipment to take apart and explore.  ‘Curiosity’ items/equipment for children to predict, explain and think about their use and purpose.  Music technology toys to explore and create with e.g. recording microphones, listening devices, drum machine for recording simple rhythms, electronic organs and pianos for creating own sounds and music on, exploring guitars, violin, harp and a wide range of multicultural instruments to explore how they work and make sounds.  Equipment used in the world of work – linked to themes studied e.g. people who help us – hairdressers, doctors – xrays etc, stethoscope, thermometers  Cookhouse – exploring technology in the kitchen toys, equipment and appliances e.g. using these safely and learning about how they are used to cook food in different ways - toaster, microwave, soup maker, electric whisks and mixers, smoothie maker, bread maker, popcorn maker, digital scales, electric oven and hob, dish washer and washing machine to wash aprons and tea-towels. |