



Introducing STEM to young children through outdoor play


Cotlands

	Activity	Skills and knowledge	Resources required
<p>Science activities Water is a playful resource that encourages children to engage in science concepts while they play and have fun</p>			
	<p>Use small zip lock bags to freeze water in different shapes – on a hot sunny day give the children a block of ice to draw on the paving and watch how the water evaporates</p> <p>Fill 2 shallow containers with water – one should be ice-cold water and the other warm water. Give the children some coloured ice blocks and let them place them in the 2 sets of water and see while ones melt the fastest</p> <p>After the rain – help the children make paper boats and float them in the puddles – it's a great opportunity to talk about some simple science concepts</p>	<p>How ice melts How water evaporates States of water (solid, liquid)</p> <p>Effect of warmth on ice Changing the colour of water Slowing or speeding up the melting process</p> <p>Floating and sinking Water pollution Where does the rain come from</p>	<p>Ice blocks</p> <p>Containers (ice cream tubs are great) Coloured ice cubes – add some food colouring to the water before freezing Warm and cold water</p> <p>Paper boats</p>
<p>Technology activities Technology is more than computers and Apps, it's really about how things work and what</p>			
	Encourage children to try move an object	Weight	Objects like empty containers,

	<p>from one point to the other without actually touching the object – provide them with some possibilities and then get them to suggest some ideas</p> <p>Balance them on a skateboard and wheel them, use a piece of material to create a hammock or tie some string and pull get them going and then see what they can do</p>	<p>Cause and effect Movement Balance</p>	<p>bottles of water, favourite teddy</p> <p>Wheel toys, tubes, large pieces of material, string, and anything else you can imagine</p>
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Engineering activities

A garden is a wonderful place to build a city, create a wonderland or even just design a garage for all your cars

	<p>Using waste materials like boxes, tubes, and empty containers build a doll house, garage, or entire city – bring out you figurines and enjoy</p> <p>Mazes can be such fun – use some safe outdoor items like hosepipe, garden chairs, recycled materials like boxes and old pallets to create a maze – then see if you can roll a ball all the way through without touching the sides</p>	<p>Design Construction Balance Size</p> <p>Direction Movement Design Construction Proportions</p>	<p>Boxes, empty containers, tubes, bits of material, cardboard</p> <p>Garden furniture, hosepipes, pool noodles, boxes, pallet wood, ect</p>
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Maths activities

Maths is much more than just counting, concepts like number operation, matching, sorting, measuring and data collect are just some of the maths skills children can practise while playing out doors



Let children design their own Frisbees from paper plates (while lying on the grass enjoying the sunshine), they could make them as colourful and exciting as their imagination allows. Then have a contest to see who can throw them furthest – remember to measure using the same size steps or even a straight object like broom stick to see who went the furthest

Graffiti can be done on a cold day – just grab a warm top and some chalk. Create some geometrical patterns on the walls and paving - they will easily wash off the next time it rains.

Obstacle courses are a great way to have children experience the spacial concepts

Length
Speed
Counting

Patterns
Shapes
Colours

Maths vocabulary like – under, next 1st

Paper plates
Creative materials like – crayons, glitter, pens and markers

Large side walk chalk

Whatever you have lying around

	<p>like under, next to, besides, as well as numerals like 1st, 2nd etc. . .</p> <p>Build a simple obstacle course with what you have – over a chair, through a box, 1st hop through the red hoola hoop then the green one. Crawl under the table and around the tree -</p>		
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