

## Water wall

Waterplay is a fun way to get your child thinking about the properties of liquid as well as how they can build different structures for water to flow through. Build a water wall at home for endless hours of fun play with water!

*Topic:* Water play / I can build

*Time:* Unlimited!

*Age group:* 4 - 7

## What you need

- A structure that can be stood up vertically that objects can be attached to – a plant trellis or peg board attached to a wall is perfect for attaching using cable ties. Or you can use an existing fence. Or a wooden board that you can pin or nail objects too.
- Cable ties/Thumb tacks/Nails
- Object for water to flow through:
  - Plastic tubing
  - Plastic cups/bottles/containers
  - Funnels
  - Pipe pieces
- Some spare containers/pipes/funnels/tubes and strainer/colander for more explorations!
- Large basin to collect water at the bottom of the wall
- A knife/nails to put holes in the containers as needed
- Plastic jug to pour water in at the top!

## What to do

### Set up

Based on the tubes, containers and pipes you have, draw out a rough plan of what you want your water wall to look like before you start building it! Create a few pathways for the water to flow down by linking tubes, pipes and plastic bottles with holes cut in them. You can set up explorations of water flow in these pathways by designing them to have the following examples or something similar:

- Have two plastic bottles with the bottom cut off positioned upside down as part of the pathway – one with a lid and one without.
- Have two plastic bottles on their side as part of the pathway, one with holes cut in the bottom and one without.
- Two plastic bottles upside down without lids. One with a sponge in it. One without.

### Activity

1. Free exploration: Start with allowing your kids to explore the water wall by pouring water in the top of each pathway and seeing what happens – this will probably take some time!
2. Discuss what is happening with your children as they pour the water in. Use the language associated with liquids such as pour, drop and flow.
3. If you have explorations built into your water wall use them to explore the movement of the water – how it can be trapped in the bottle with a lid and how it flows through any holes, or how it can be soaked up using a sponge so that less water comes through.



4. Use the spare containers and objects to investigate what can be used to carry water by getting the children to use each of the objects to lift the water from the bottom basin to the top of the water pathway.

## The Science

Water is a very special liquid! It is made up of many many water molecules that contain one oxygen atom (O) and two hydrogen (H) atoms stuck together = H<sub>2</sub>O! Every living thing on Earth requires water. At room temperature it is a clear liquid. Because it is liquid it follows the rules that liquid follow, it will flow along with gravity and it will fill the space of any container it is in and take that containers shape. Water has some cool properties because of the way the water molecules interact with each other – one of these is that it is very good at dissolving things and why we use it for cleaning ourselves and our dishes!

## Science talk

### Description words

Use description words like pour, flow, splash, drip, stir, squirt, spill, leak. Names of objects for moving water – tubes, pipes, funnel, container.

### Science process words

Use science process words like compare, see, observe, discover, explore, wonder, test, and investigate. 'Let's compare the movement of the water through the two pathways we have made – did the same amount of water get through both – why/why not?

### Open ended questions

Questions are the key to thinking scientifically! Open ended questions are good as they encourage children to explain and expand upon their thoughts. For example: What happens when we pour the water into this container? Does it change shape? Can you think of a way to stop the water flowing down? Why do you think the water is flowing this way? Can you think of where else we find water?

## Skills

Children will learn about the concepts of water as a liquid and the ability of liquids to flow, pour and drip.

## Stay Safe

- Be careful with any rough edges of plastic/tubes if they have been cut.
- Use only a shallow container to collect and recycle the water at the bottom of the water wall to avoid having a deep container full with water.

## Ways to document

You can create a drawing of the water pathway that you make and discuss how you can change it!

## Extending the activity

Investigate other properties of water like buoyancy by investigating different objects that float or sink in water or by investigating the different states of matter – what happens when you add ice, where does steam come from? Talk about water in the environment – where does rain come from and where do rivers flow to. Play Poohesticks on a bridge over a river with different items to investigate floating or try to dam a little stream.