

MATHEMATICAL DEVELOPMENT



1. Fill It Up

Develop concepts such as capacity, weight and volume by filling up different containers of various shapes and sizes with sand and water. Wonder and explore with the children:

- Which container holds the most or least?
- Which resources should we use to fill them in the quickest amount of time?

2. Empty or Full

Encourage mathematical vocabulary by introducing language such as empty, half full or full. Can the children give an instruction for others to follow, such as 'Can you show me a full container?' Alternatively, they could choose a label and fill up their container to match.

3. How Long To Empty?

Use different resources that allow sand and water to pass through, for example a sieve or a water spinner. Can the children estimate how long it will take for different amounts of sand or water to pass through. Investigate and check their estimates and encourage children to count as they watch. Extend this by exploring what happens to the time it takes when there is more sand or water.

4. Recipes

Challenge children to make sand cakes, soup or sand pies. Try following a recipe, for example 1 scoop of sand and 3 drops of water to make the perfect creation.

5. Time to Talk...

- Explore different vocabulary and introduce comparative language such as heavy, heavier, light, lighter, empty, full, big, bigger and small, smaller.
- Discuss the different shapes children can see in the resources or that they can make in the sand.



MARK MAKING



1. Making Patterns

Explore different ways of making marks and patterns in the sand and water. For example, rolling a vehicle and looking at the pattern its tyres make or dragging a rake through the sand. Can the children use language to describe the patterns, such as wavy, straight, curved, etc.

2. Secrets In The Sand

Inspire children to make marks or write messages in the sand using different tools and resources. They might want to write their name, practise sounds or make creative patterns and designs.

3. Lines, Curves and Dots

Investigate together which different tools can be used to make lines, curves and dots. Have a go and encourage children to make these marks for friends to copy. This is an ideal way to encourage the movements needed for early writing.

4. Pattern Detectives

Send children on a pattern hunt around the setting. What patterns can you find? Challenge them to create similar patterns in the sand and water using different tools and methods, such as scooping, dragging and sprinkling.

5. Time to Talk...

- Talk about whether it is easier to make patterns in wet or dry sand.
- Talk about children's favourite resources and what they do or don't like about them.
- Extend children's descriptive vocabulary with words to describe their different marks and patterns.



EXPLORATION

AND INVESTIGATION



1. Don't Spill The Water

Challenge the children to work together to get the water from one bucket or area to another using the different resources. Can they identify which resources would be the best to use and which ones they should try and avoid, such as those with holes in. You could set it up as a challenge and see who has the most water when they reach their destination.

2. Moving Water

Can the children find a range of resources that will either make the water move or objects on the water move, such as using a pipette to create waves. They could use resources or may choose to use child power! Extend by adding boats or balls that float to see who can pass the finish line first!

3. Shifting Sand

Challenge the children to find different ways of moving the sand. They may wish to use some of the resources provided or their hands. Which way is the best for moving lots of sand or smaller amounts and why?

4. Wet and Dry

Encourage the children to explore both wet and dry sand. Which is the easiest to make moulds, print patterns or move? Can they explain the different ways in which the sand moves and behaves.

5. Time to Talk...

- Encourage children to talk about their experiences in the sand and water and share what they notice and see.
- Explore and describe how sand and water are the same and different.
- Discuss the ways in which sand and water move and what you can create with sand and water.



CREATIVITY



1. A Day At The Beach

Why not visit the beach for a day or have a beach day in your setting? The children can build structures in the sand, or excavate to create moats that hold water. They can practise filling, emptying, building and exploring. Encourage children to extend their ideas to include shells or make flags to decorate castles.

2. Mini Archaeologists

Using wet or dry sand, or a mixture of both, bury items that the children can dig up and discover. Can they retrieve the items using different resources available? Which are the best resources for finding smaller items and why?

3. Sand Art

Ignite children's creativity by creating sand art using the different resources. They can experiment by sprinkling, make patterns by dropping or build and mould. Try drizzling coloured water onto the sand to make interesting patterns or shapes.

4. Create A Scene

Using different buckets, moulds and tools, encourage children to create sand scenes which they could use in their play, such as lunar landscapes or mountain backdrops. They could also collaborate to build magnificent sand sculptures.

5. Time to Talk...

- Use language to describe and talk about the movements they use to make sand creations, for example lifting, sprinkling, rolling, spreading, raking, etc.
- Encourage children to describe their sand scenes and sculptures. Can they create a story about their creation?



SCHEMATIC BEHAVIOURS



1. Transforming

Explore and describe what happens when children mix water and sand. Look for the changes that they can see. You could also explore and observe other changes such as when you add ice into the water.

2. Rotation

Observe how water moves and travels differently. What patterns are made when you use different resources such as water spinners, sieves, water whisks, or bowls with holes in?

3. Enveloping

Hide objects or body parts under the sand and explore the language of enveloping, such as 'where is it?' You could also explore activities such as covering and hiding with buckets, or covering creations with fresh sand to start again.

4. Transporting

Explore different ways to move and transport sand and water. Set up challenges to transport from one place to another, or diggers to move sand around. Consider how you can transport things safely, without spilling any sand or water.

5. Time to Talk...

- Talk to children about the different things they like to do in the sand and water.
- Model the language and describe what can be seen as they move, make patterns or transform sand and water in different ways.
- Observe as children engage in different schematic behaviours and sensitively scaffold and support their play by introducing new language and vocabulary as and when appropriate.



