A Short Guide to Running a

STEM Playgroup



STEM stands for science, technology, engineering and maths. A STEM playgroup is a space where children and their parents or carers can explore these topics through play.

STEM playgroups are child-centred and focus on hands-on, curiosity-driven experiences that encourage children to ask questions, test ideas and explore how things work.

STEM playgroups support early problem-solving, creativity and critical thinking, while building confidence and a positive attitude towards learning.

Playgroup Space

- Offer materials that children can move, combine and experiment with freely, such as blocks, cardboard tubes, recycled containers and natural materials.
- Create a safe space where trial and error, mess and curiosity are encouraged.
- Ensure materials are age-appropriate and easy to access.
- Set up simple activity stations that encourage exploration.
- Provide space for active exploration as well as an area for quieter investigation.

Partnerships and Promotion

- Partner with local libraries, schools , universities or community centres.
- Connect with organisations that support early learning or STEM engagement.

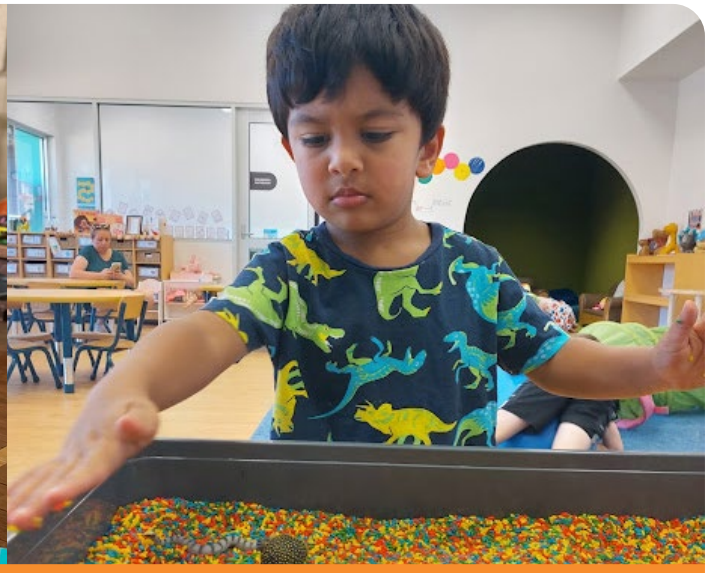
Toys, Resources and Activities

- Encourage water play – pouring with cups and funnels, floating and sinking objects, and exploring cause and effect.
- Set up building and construction games using blocks, magnetic tiles and cardboard boxes. Try starting with towers, bridges and ramps.
- Create simple experiments such as mixing colours with water or paint, melting ice, or making bubbles.
- Establish sorting and classifying activities – for example, sorting objects by size, colour or shape.
- If you have access to the outdoors, encourage nature-based exploration. Collect leaves, sticks or rocks, observe insects and compare textures and shapes.
- Create problem-solving challenges- for example, “How can we make this stand up?” or “How can we move water from here to there?”

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An Important Note

STEM in early childhood is about exploration, not outcomes. Focus on the process—asking questions, trying ideas and learning through play, rather than getting the "right" answer.

Encourage parents and carers to explore alongside children. Wondering aloud, asking open-ended questions and showing genuine curiosity are the most powerful things an adult can do.

Be mindful of different abilities, confidence levels and access needs. Adapt activities and spaces so all families can participate comfortably.

More Information

Museums Victoria

The Museum Victoria website offers practical ideas relating to play-based learning and development.

Little Scientists Australia

An organisation supported by the Federal Government offering early STEM resources and inspiration.

Monash University's Conceptual PlayWorld

The Monash PlayLab has developed a new and effective way of teaching STEM to young children through play.

For more advice and resources, register your playgroup!

