

**Sally Fierenzi**

Royal Botanic Gardens  
Victoria

[sally.fierenzi@rbg.vic.gov.au](mailto:sally.fierenzi@rbg.vic.gov.au)

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## Designed by Nature: A Nature-based STEM Learning Experience

Royal Botanic Gardens Victoria (RBGV) provides nature-based learning experiences to students from the early years through to tertiary level and beyond. The new RBGV STEM learning program, Designed by Nature, connects students to nature-inspired design through the practise of Biomimicry.

Biomimicry encapsulates integrated STEM learning by focusing on real-world, problem-solving outcomes and engaging in a systems-thinking design approach, whilst learning about and from the science of nature. The practise of Biomimicry provides “a rich framework for teaching that can be used to address a wide range of topics in science, engineering, sustainability and environmental literacy” (Biomimicry Institute, 2017), which makes Biomimicry an ideal STEM framework and The Gardens an ideal STEM laboratory.

This workshop will provide an opportunity for teachers to be taken on a journey to reconnect with the wonders of the natural world through the lens of biomimicry and learn about a design practise that can be used as a framework for teaching STEM and as a lens for any STEM learning or problem-solving activity. Participating teachers will partake in a nature-based STEM experience by learning how to practise Biomimicry guided by an RBGV Biomimicry Educator. This workshop will consist of three parts.

1. An overview of Biomimicry and how it links to STEM, and the Designed by Nature program, showcasing student designs.
2. A series of interactive Biomimicry skill building exercises.
3. Teachers will be challenged to practise some Biomimicry skills and use take-away tools to brainstorm innovative biomimetic design ideas.

**Preparation Material:**

Please download:

RBGV Designed by Nature: A nature-based STEM learning experience: <https://butterfly-puma-9je7.squarespace.com/s/RBGV-Designed-By-Nature-Workshop-Welcome-Sheet.pdf>

Function in nature worksheet: <https://butterfly-puma-9je7.squarespace.com/s/STEM-Ed-Conf-Function-in-Nature-Function-in-Design-Worksheet.pdf>

<https://www.youtube.com/watch?v=ovz80c9bVpY>

<https://www.youtube.com/watch?v=sgvVTgDdUn8>