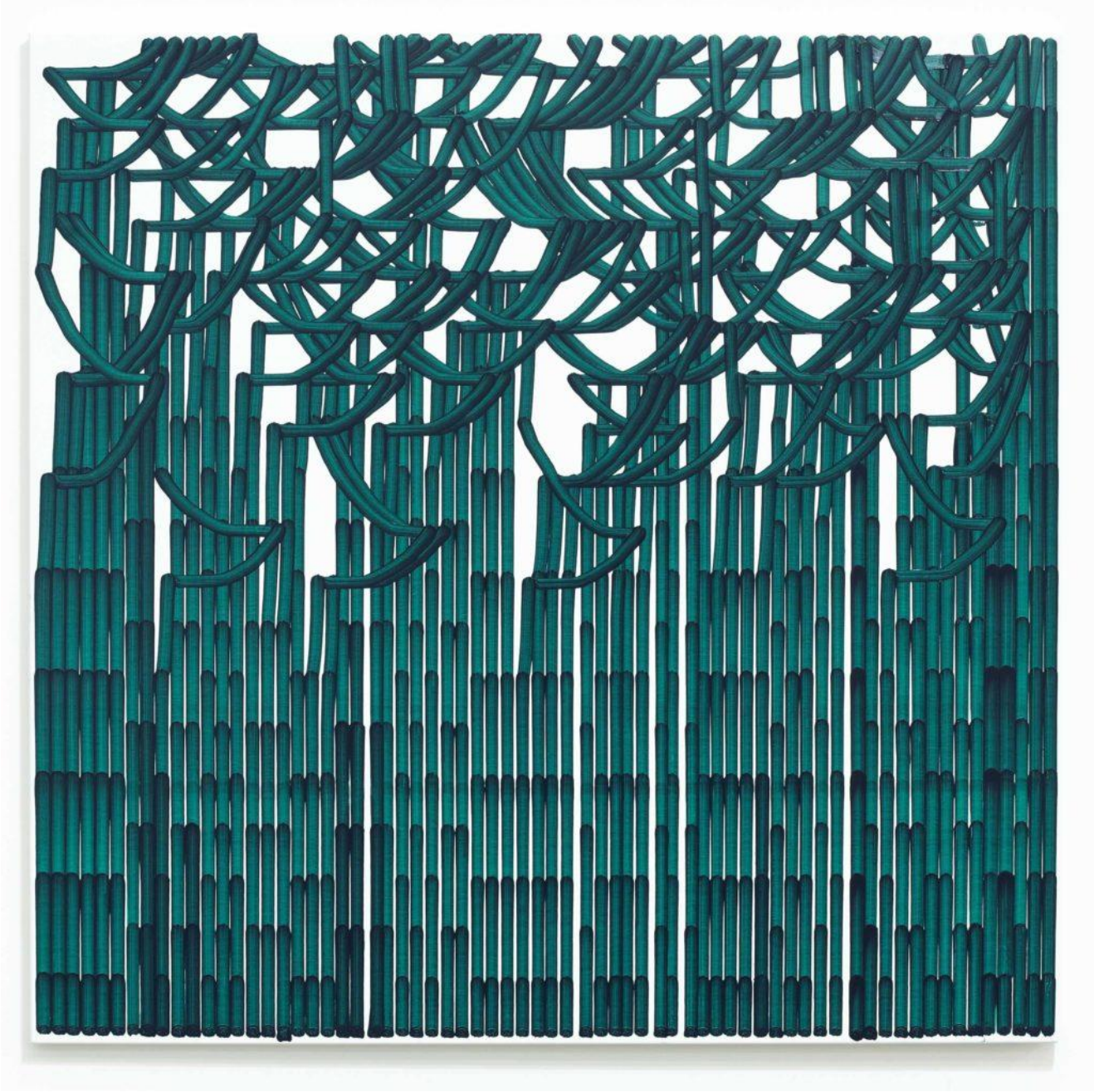

Simon Ingram *Matotchkinchar* 2011, University of Auckland Art Collection.

Resource Card *Simon Ingram: The Algorithmic Impulse*

City Gallery Wellington
Te Whare Toi

Part of experience Wellington wellington museums trust

Principal Funder
Absolutely Positively Wellington City Council
Me Heke Ki Pōneke

Foundation

Civic Square, 101 Wakefield Street
Wellington 6140, New Zealand
T: +64 4 913 9029
E: citygalleryeducation@experiencewellington.org.nz

citygallery.org.nz

City Gallery Wellington's Education Service is supported by the Ministry of Education's LEOTC fund.

MINISTRY OF EDUCATION
Te Tāhuhu o te Mātauranga

Resource Card

Education Programme: *Art and Algorithms*

About the Exhibition

New Zealand artist Simon Ingram uses mathematics, machines, and electronics to make paintings. His practice combines new technologies (robotics, EEG, and radio astronomy) with traditional painting language and tools (canvas, brush, and oil paint). The resulting paintings look like modernist abstractions, sometimes geometric, sometimes gestural, depending on the program used to execute them.

The exhibition surveys Ingram's work since 1996. It includes his early Automata Paintings (whose gridded compositions were arrived at not by intuition but using simple algorithms) and his Radio Paintings (produced by a painting machine based on low-frequency radio waves).

It also features Monadic Device, a painting machine that responds to brainwaves via an EEG headset. It is programmed to paint lines that wander around the canvas, while the sitter's beta waves determine the length of the lines and their alpha waves the direction they turn. Complicating the experiment, they can also consciously intervene in the process using a computer tablet. Finished paintings may scramble drawing by hand (with intention) and drawing by brain (without).

On the show's opening weekend, Ingram will don the EEG headset to create new works. On later weekends, invited guests and members of the public will be hooked up to the machine. Paintings will accumulate throughout the show.

Vocabulary

Algorithm: a sequence of well-defined instructions designed to solve a problem or perform a task.

Sequence: one thing following another in a particular order.

Loop: running the same sequence multiple times.

Computational Thinking: Thinking like a computer; solving problems, designing systems, and understanding human behaviour by drawing on the concepts of computer science.

Pre-Visit Discussion

What do you know? What do you think?

How have advances in technology changed the way humans have made art throughout the ages? What might happen in the future?

What do you think about machine-made art? Does it matter if a machine or person made an artwork? Why?

Watch this video about the long history of collaboration between humans and technology in art-making. *Do Machines Make Art?* www.youtube.com/watch?v=FqrHmKo-cm4

Post-Visit Activities

Try some unplugged activities to practice computational thinking:

- *Tukutuku Coding* by Raranga Matihiko. Write code to move through a Tukutuku grid. rarangamatihiko.com/resources/tukutuku-coding-unplugged-activity
- *Colour by Numbers* by CS Unplugged. Use pixels as a building block. classic.csunplugged.org/image-representation/
- *Making Faces: Playdough Programming* by Digital Schoolhouse. A 'programmer' and 'human computer' work together to practice precision and logic in sequencing instructions. www.digitalschoolhouse.org.uk/workshops/making-faces-playdough-programming

Research other artworks and ideas that relate to the show:

- Jean Tinguely *Méta-Matics* (1959): A series of machines that produced drawings that resembled mid-century abstractions. www.youtube.com/watch?v=VxoqVvQeil0
- Janine Antoni *Slumber* (1993): A polysomnogram transforms brainwaves into a weaving pattern. www.janineantoni.net/slumber
- *Art Machines Machine Art:* An exhibition of art machines from the 1950s to the present. www.youtube.com/watch?v=FZpEYLa9PGs