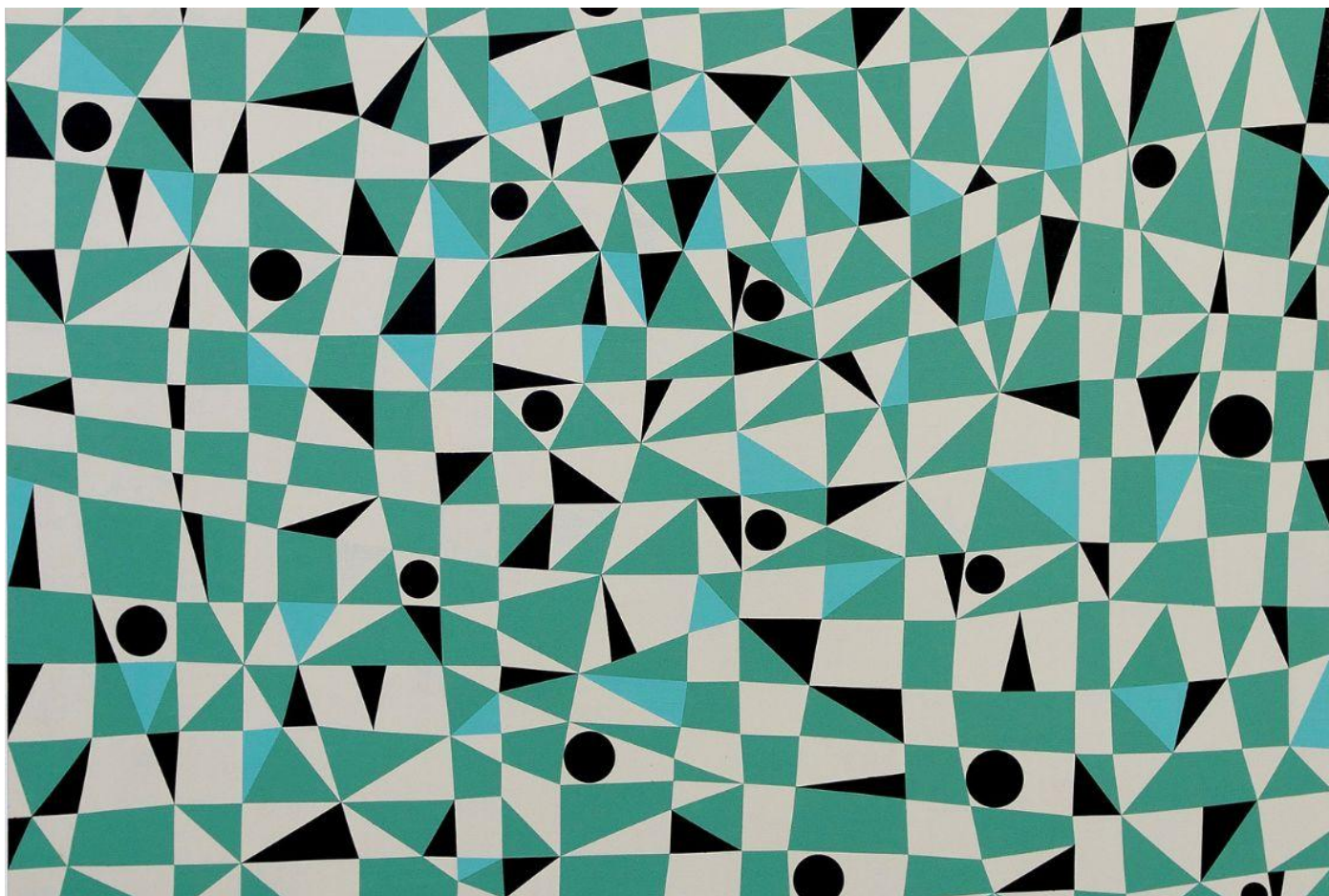


Of Peras and Apeiron: ends and infinity

Gerard Caris, Neil Clements, Channa Horwitz, Ronnie Hughes, Roy Johnston, Grace
McMurray, Dannielle Tegeder, Suzanne Treister



(Detail) Image Courtesy of Ronnie Hughes. Ronnie Hughes, 'Klikklak', Acrylic, co-polymer on cotton, 188 x 183 cm, 2015

06 September – 25 October 2025

Curated by Francis Halsall and Belinda Quirke

Resource & engagement for second level students & teachers supporting

Content Area 3: Today's World

Describing the exhibition on page 3, we have highlighted:

- **Theme & subject matter:** the 'story' behind the artwork, what the work is 'about'.
- **Process & media:** the techniques and materials used by the artists to create the artworks.
- **Composition & layout:** the arrangement or placement of the artworks within the gallery spaces.

A glossary of words highlighted in *bold italic font* to aid your understanding is on page 9.

Designed to assist you in an inquiry-based exploration of the artworks, this resource includes:

- Associated events you might like to attend.
- Information about the artists.

Questions to consider & discuss on pages 5-8, we explore the works of four artists relating to:

Artists Theory & Thinking

- motivations behind the work.

Processes & Media

- techniques & materials to create the work.

Art & the Environment

- a source of inspiration.

Art as Social Commentary or Commentator

- raising awareness through art.

Combine this resource with our associated learning & engagement events listed below:

[Exhibition opening](#)

Saturday 06 September at 2:30pm

Join us in the gallery and meet the artists.

[Gallery Tours for Junior & Senior Cycle using Visual Thinking Strategies \(VTS\).](#)

Throughout the exhibition

Free, booking essential.

[We Are All Connected](#)

Friday 3 October 9:30am & 11:30am Post-primary class groups

Free, booking essential

Under the guidance of visual artist Andrew Carson, students will explore the transformation of individual brick units into more complex and pixelated images, crafting individual geometric images inspired by the union of art and maths, each piece, a boundless expression of the boundless system. Linking to components within Content Area 3 - Today's World

[Visible Mending with exhibiting artist Grace McMurray](#)

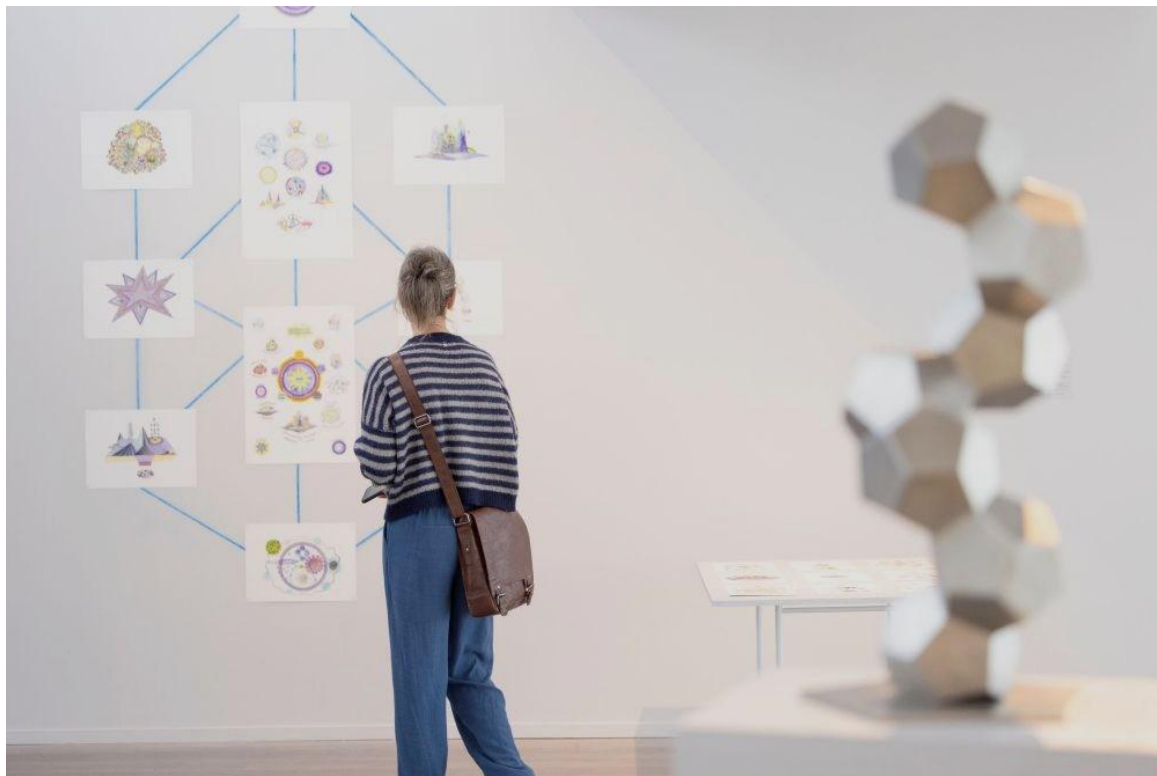
Saturday 18 October at 10.30 a.m.

Price: €15

For: Students (14+) & Adults

A darning, repurposing workshop with a difference with exhibiting artist Grace McMurray. How to use weaving stitches to mend fabric or clothing, this workshop is rooted in McMurray's broader artistic practice, the relationship between the digital and the handmade, and invites participants to engage in processes that challenge traditional hierarchies of what is seen as craft and fine art.

About the exhibition *Of Peras and Apeiron: ends and infinity*



@FintanClarke

Of **Peras and Apeiron: ends and infinity** is a group exhibition of eight artists who have explored **systematic processes** as a fundamental part of their practice. **Francis Halsall and Belinda Quirke** have **curated** a selection of works made between 1969 and 2024, that explore different numerical, geometrical and methodical systems used to make art.

The title **Of Peras and Apeiron: ends and infinity** is a play on words. Taken from the Greek term *Apeiron*, meaning infinite or limitless, and *Peras* (finite) meaning confined by limits, an end point.

Process & media: The use of **systematic processes** by the artists results in lengthy periods of time researching, problem-solving and creating a finished piece. For example, Ronnie Hughes took three years to complete his small painting 'Celest', while Suzanne Treister began her body of watercolour works **Technoshamanic Systems** in 2019 and is still ongoing.

Deeply rooted in the process of mathematical calculation, the artists use drawing, weaving, painting, sculpture, written word and textiles in media such as metal, paint, and wood.

Themes & subject matter: From the earliest times, artists have used mathematical systems to create their work. The artists in this exhibition were chosen by the curators for their use of numerical, geometrical and methodical systems. Presented in very different forms they use systems in playful, exploratory, *sensuous* and even mystical ways.

Composition & layout: With careful consideration by the **curators** the artworks are mostly wall-based, with the exception of Dannielle Tegeder's mobile, a table display of Suzanne Treisters watercolours, two plinth based works by Gerard Caris, all in gallery two. Grace McMurray's 'Polycotton Patchwork' rests on the floor in gallery three.

For this resource, we have chosen four of the eight artists to explore in more detail on pages 5 - 8.

To view more artworks in this exhibition, see: [Of Peras and Apeiron: ends and infinity](#)

The Artists

The artists all used mathematical and rational, fictional and personal methods to create these works, whilst exploring systems in a deeply creative way.

Channa Horwitz (US) (1932–2013) produced drawings, paintings, and installations for over four decades using a system she called “Sonakinatography,”. Based on the numbers 1 to 8, each number was assigned its own colour. Intended as a way of marking and expressing time, movement, and rhythm, many of her works were originally intended as scores for dancers, musicians, and performers. However, Horwitz’s labour-intensive process of creating the drawings themselves suggests they are also records of the artist’s own time, labour, and thought.

Gerard Caris (NED) (1925-2025) the esteemed Dutch artist, pursued a single *motif* the **pentagon** throughout the course of his career using the artistic application of the number 5, or what he termed **Pentagonism**. In [minimalist](#) and [abstract](#) styles with a simple colour palette, he produced mostly drawings, paintings and sculpture from intimate, small scale pieces, to monumental sculptural work.

Roy Johnston (NI) is an artist, critic and art historian. His work of the late 1960’s to early 1980’s uses **Pythagorean rationalism** and colour **permutation** both in sculptural form and 2D relief. Influenced by [Ostwald’s colour theory](#), his artwork *Permutation and Shift* in Gallery 3, uses numerical colour combinations of red, yellow, white, black and blue. *Sixteen rotated forms (i), (ii), (iii), (iv)* in Gallery 1, consist of four separate canvases of sixteen different units, together equalling 4^3 , 64.

Ronnie Hughes (IRE) is one of Ireland's most dynamic abstract painters. His practice introduces chance, the random, or the unexpected, with deeper sets of patterns such as those found in chaos theory, fluid mechanics and weather systems. Evolving over a long periods of time, they are process-driven, often started with no plan or, in most cases, any sense of the outcome until the works are close to completion. **Learn more about Ronnie Hughes Processes & Media on page 6.**

Dannielle Tegeder’s (US) is a New York-based artist whose practice is grounded in painting but extends to drawing, wall works, sculpture, animation, music, and writing. Using experimental approaches, she often explores the role that social and urban systems play in shaping contemporary life, developing collaborations with others to create dialogues between abstraction and music. **Learn more about Dannielle Tegeder’s Art & the Environment on page 7.**

Suzanne Treister’s (UK) practice explores possible **Utopian futures**. Using various different media including video, the internet, photography, drawing and watercolour, an ongoing focus of her work is the relationship between new technologies, society, alternative belief systems and the potential futures of humanity.

Grace McMurray’s (NI) refers to grids in their expanded practice of drawing, patchwork, knitting, weaving and installation to question stereotypes of gender and social conditioning. Processing personal narratives, they attempt to reconstruct a sense of self, the **psycho geography** of the body, considering domesticity, gendered labour, isolation, and relationships. **Learn more about Grace McMurray’s Art as Social Commentary on page 8.**

Neil Clements (NI/Scotland) lives and works in Glasgow. Referring to moments in the history of abstract art, his four works in this exhibition are copies of paintings created in 1968, notably Roy Johnston’s painting ‘Systems’, acrylic on canvas. Not intended to reproduce exactly the appearance of the original paintings, Clements works are recreated with enamel on aluminium treadplate, and displayed as 3-dimensional objects, leaning against the walls of the gallery spaces. **Learn more about the Artists Theory & Thinking on page 5.**

See Useful Links on page 9 to gather more information on each artist.

Questions to consider & discuss

Artists Theory & Thinking - Neil Clements



Neil Clements

Riser (System, after Roy Johnston),
2024

Enamel on aluminium treadplate,
steel, walnut

136 x 122 x 3cm

@Fintan Clarke

Neil Clements presents four artworks that are copies of paintings created by **abstract** artists in 1968. His intention is not to reproduce exactly the appearance of the original painting but his works act like theatrical or prop-like substitutions for the original historical works. In this particular exhibition, his aim was to gather together four different paintings, made in different geographical locations in the same year, so that they might be seen in relation to one another in this space.

Neil Clements four works created in metal, lean against gallery walls, each sitting on two small dark walnut 'feet' raising them off the floor.

Take a close look at the works in the gallery.

– how do you think they were assembled?

Using treadplate material for fifteen years, it indicates that Clements is not the author of the works he is replicating. Appearing as a continuous, textured pattern sitting behind the painted image, the teeth pattern of the treadplate acts as a watermark, a modern-day stamp of ownership.

- Why do you think Clements recreated these works on metal and not canvas or board?

Many abstract artists see their work as 'non-objective' (representing nothing but itself). Clements argues that the world an artist lives in always finds its way into their art, influenced by the cultural, historical and societal events taking place around them.

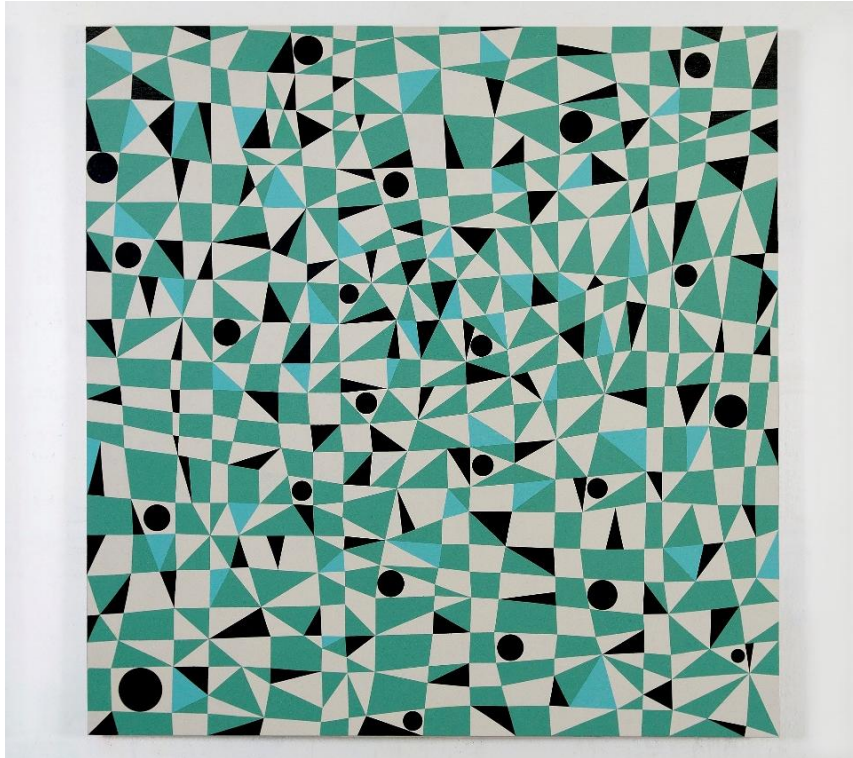
The four artworks represented here were all originally painted in 1968 by Winfred Gaul, Roy Johnston, Judith Lauand, and Frederick Hammersley. One of the most significant decades in 20th-century art, the 1960s saw the rise of Pop Art, Minimalism, Conceptual Art, Performance and Feminist Art.

- Find out more about these artists, their style and possible societal events that influenced their work.

- Compare and contrast the original artworks with those by Neil Clements in this exhibition.

Questions to consider & discuss

Processes & Media - Ronnie Hughes



"The physical act of making a painting is for me an act of discovery, ...I try to make paintings that reward careful looking and that encourage contemplation."

Ronnie Hughes

***Klikklak*, 2015**

Acrylic co-polymer on cotton

188 x 183 cm

@Fintan Clarke

Ronnie Hughes is one of Ireland's most dynamic abstract painters. His practice is process-driven to the extent that there is no plan or, in most cases, any sense of the outcome until the works are close to completion. Complex and multi-dimensional, the painted surface is constructed through multiple layers, colours and shapes, some not visible in the finished work. What appears to be random or chaotic is revealed to have a hidden template, structure or pattern. "I'm interested in exposing these unseen forces," he says, "the things that lie beneath appearance".

Hughes paintings evolve over long periods of time, sometimes years. He often takes photos throughout the process so he can look at and think about the work when not in his studio.

This artwork '**Klikklak**' began as a line drawing in 2014. A spiral originating from the centre formed a drawn structure for the painted image to develop over its surface.

"The title *Klikklak* is onomatopoeic - if the image made sounds it would be of that type. I also like how the word is full of 'k's like the shapes in the painting".

- Discuss this connection between sound and shape.

In recent years Hughes' work has become more optically charged; colour and shape are presented as vibrational energies where the painting's surface contains records, holds and represents time.

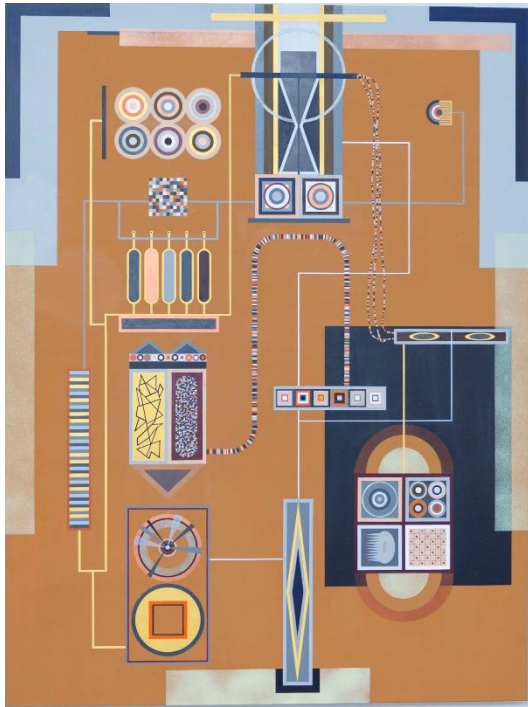
- In your opinion, what is the impact of the layout of shapes, colour and scale within this painting?

Making his own acrylic co-polymer paints allows Hughes to control the pigment colour and its intensity, the *viscosity* as well as matt or gloss finishes.

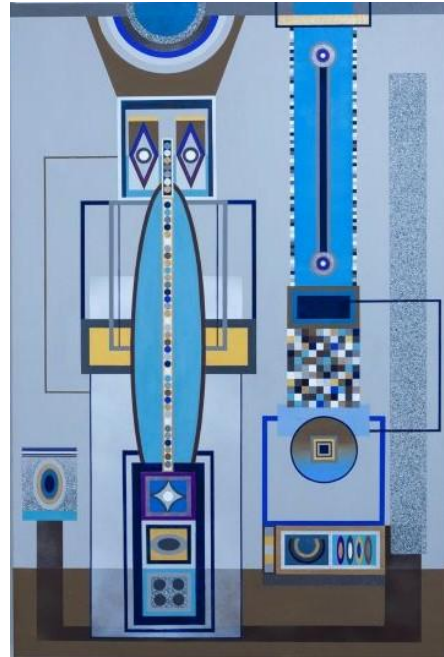
- Experiment with different thicknesses of paint. Mask off shapes, allow to dry, and repaint, observing the surface and construction of the finished work.

Questions to consider & discuss

Art & the Environment – Dannielle Tegeder



@Fintan Clarke



Left: *Fawn Labyrinth Diagram with Naples Yellow System and Invisible Seasons*, 2024, acrylic and flashe on stretched canvas on panel, 122 x 92 cm

Right: *System of Grey Cessation with Mechanical Sorrow, Blue Hour Seduction of Long Bodied Cranes with Gold Format Dead Ends and Honey windfall comfort network of colorful jewels*, 2024. Acrylic and flashe on stretched canvas on panel 91 x 61 cm
Courtesy of Kevin Kavanagh Gallery

Dannielle Tegeder, a New York-based artist, explores new experimental approaches within her practice in painting, drawing, wall works, sculpture, installation, animation, music, artist books, **conceptual strategies**, and writing.

Drawing inspiration from urban planning, architecture, geography, and statistical data, among other sources, she depicts the inherent beauty and interconnectivity between various social, mechanical, and informational systems. Tegeder sees her works “as a utopian city or a utopian fictional space”, with elements acting like a **legend** in some way... they are fictional spaces that intersect with abstraction, modernism, and architecture”. Considering the “constraints of architecture in a space; in cities, and how we think of spaces, and move through those cities,” she uses these thoughts “as metaphors for moving through other aspects of life.”

Describe the composition and delicate painted details within each work, observing the geometry of Tegeder’s systems.

- Do you find the choice of shapes and colours restricted or limitless. Consider the title of the exhibition in your answer.

Tegeders’ practice is embedded in Conceptual Abstraction. Find out more about this contemporary art movement.

Tegeder’s work often explores the role that social and urban systems or spaces play in shaping contemporary life.

- Consider and discuss this in relation to where you live.

Often collaborating with others, research the feminist artist collective [Hilmas Ghost](#), founded by Dannielle Tegeder and Sharmistha Ray in 2020.

Questions to consider & discuss

Art as Social Commentary or Commentator - Grace McMurray



@Fintan Clarke



Left: Grace McMurray with *Is it love or ovulation*, 2010 (floor), Polycotton Patchwork, 122 x 106 cm

Right: *Mondrian Jumper*, 2015, Sheep, Cotton and Acrylic Wool, 73 x 51 cm

Grace McMurray uses drawing and *installation* with traditional craft methods such as knitting, patchwork, and weaving to question stereotypes of gendered objects and **social conditioning**. Using geometric patterns and symmetry, creating or repairing familiar objects, she raises them out of their domestic context and into gallery settings. Through this deeply personal work, McMurray finds beauty in the underside, the exposed edges and the overlooked, using darning to create new unique patterns and grids to highlight the areas that have flaws, or things that have happened outside of our control.

“My work acts as a form of social commentary by illuminating the systems, histories, and expectations that often remain unseen or unspoken. Through my work, I aim to raise awareness of the ways domesticity, gendered labour, and societal roles are ingrained and perpetuated, often invisibly. The work challenges viewers to reconsider what is valued and what is dismissed, what is public and what is private”.

Discuss McMurray’s statement above, and the importance and power of using art as a social commentator.

What object would you embellish or repair to exhibit that conveys a societal or global issue you feel is important to highlight?

List reasons for your choice.

McMurray is interested in the *expanded practice* of drawing using wool, ribbon and pattern.

- Discover what *expanded practice* in art means.

A member of [Array Collective](#), in 2021 they became the first Northern Irish winners of the Turner Prize.

- Find out more about this artists collective Grace McMurray is involved in, and the [Turner Prize](#)

Resource & engagement for second level students & teachers supporting

Content Area 3: Today's World

Glossary

Abstract (art), when an artist has either removed (abstracted) elements from an object to create a more simplified form or produced something which has no source at all in external reality.

Conceptual Abstraction involves simplifying complex ideas by focusing on their essential features.

Conceptual strategies deals primarily with abstract or original thoughts.

Curator, selects, organises and displays artworks in a gallery or museum.

Installation art is usually mixed media constructions, often designed for a specific place, for a temporary period.

Expanded practice is an extensive range of possibilities for making art in multiple and diverse media and materials.

Legend (on building/construction plans), serve as a key, explaining symbols, notations, and abbreviations used throughout the plans, thus allowing for clear and precise comprehension of the design and execution details.

Memetic, relating to or constituting an element of a culture or system of behaviour that is passed from one individual to another by imitation or other non-genetic means.

Minimalist style comes from Minimalism, a movement in the visual arts and music originating in New York City in the late 1960s, characterised by extreme simplicity of form and a literal, objective approach.

Motif, a decorative image or design, especially a repeated one forming a pattern

Onomatopoeic, the naming of a thing or action by a vocal imitation of the sound associated with it (such as buzz, hiss) also: a word formed by onomatopoeia.

Ostwald's colour theory categorised colours into three groups: neutral colours, which are combinations of black and white; pure "full colours" containing no black or white; and mixed colours, which are combinations of colours with black and/or white.

Pentagon is a flat 2D shape that has five sides and five vertices.

Permutation is an arrangement of objects in a definite order. In his artwork *Permutation and Shift*, 1980, Roy Johnston uses a palette of 5 colours which has 120 permutations or 120 ways in which these 5 colours can be ordered or arranged within the artwork.

Psychogeography describes the effect of a geographical location on the emotions and behaviour of individuals.

Pythagorean rationalism is based on The Pythagorean Theorem, a statement relating the lengths of the sides of any right triangle, is equal to the sum of the squares of the other two sides.

Sensuous, relating to or affecting the senses rather than the intellect.

Social conditioning is the sociological process of training individuals in a society to respond in a manner generally approved by the society and peer groups within society.

Sonakinatography is a system of permutational drawing developed by American artist Channa Horwitz meaning "sound" (sona), "motion" (kineto), and "notation" (graphy) i.e. Horwitz employed colours and numbers to plot movement over time.

Systematic processes uses a structured approach in an attempt to thoroughly understand any available information through careful attention, deep thinking, and intensive reasoning.

Utopian futures, the thought of a better or ideal society compared to current society.

Utopian thinking - Utopia denotes an imagined ideal society that, though non-existent in reality, is envisioned as a perfect habitat for its members.

Viscosity is a measure of a fluid's rate-dependent resistance e.g. thick or thin.

Useful links: Information for this resource was gathered from the following links. Find out more about each artist's work. Look at websites, search and follow on social media, and gain additional insight into their artistic careers and practices:

Channa Horwitz whitney.org/exhibitions/2014-biennial/channa-horwitz www.youtube.com/watch?v=GduoDUR6s44

Gerard Caris www.youtube.com/@gerardcaris178

Roy Johnston imma.ie/artists/roy-johnston/

Ronnie Hughes molesworthgallery.com/overview/

Danniell Tegeder www.dannielletegeder.com/ www.dannielletegeder.com/hilmas-ghost-1

Suzanne Treister Suzannetreister.net

Grace McMurray <https://gracemcmurray.com/>

Neil Clements <https://neilclements.co.uk/>

Visiting Solstice:

Solstice Gallery is open Tuesday-Saturday 11am-4pm.

Individual students and teachers can visit the gallery during opening times.



Class and group gallery tours must be booked in advance.

To book a tour, workshop or event please contact:

Deirdre Rogers, Visual Arts Facilitation & Public Engagement Coordinator at 046 909 2308 or by emailing deirdre.rogers@solsticeartcentre.ie

If you wish to be contacted directly about upcoming events and opportunities, please let us know and we can add you to our mailing list.

We encourage feedback to assist us in developing these resources and events to best meet your needs. Please get in touch with suggestions or any questions about our programme.

Best of luck to all students in their creative studies.

Deirdre Rogers

Visual Arts Facilitation & Public Engagement Coordinator