

From

Spark

to

**A learning
resource for
schools and
teachers**

Spirit

About
Noor Riyadh

Noor Riyadh is a citywide annual festival of light and art that nurtures creativity, promotes talent and delivers awe-inspiring experiences. Launched in 2021, Noor Riyadh is a project under Riyadh Art. The festival is an annual event transforming the city of Riyadh into an urban festival of light art and innovation, featuring interactive art, installations, public sculptures, architectural interventions, and grand-scale projections that showcase the best contemporary art from renowned international and local artists.

Its second edition *We Dream of New Horizons* takes place across Riyadh in November 2022.

About this Pack

Aimed at teachers, educators and caregivers, this is a resource which connects directly to the exhibition *From Spark to Spirit*, but can also be utilized independently. It can be helpful to aid preparation for visiting the exhibition, and afterwards, to pursue further activities in the classroom or at home.

The structure, choice and order of artists that have been selected is thematic and medium based, building up an understanding of ideas and materials in a logical way, offering an enriching, complementary learning journey.

This pack encourages you to work with your students on using the artworks illustrated and presented in the exhibition as entry points into further learning. By introducing your students to the concepts explored by artists in this exhibition, you can inspire them to develop skills in multiple areas of the curriculum.

The pack includes cross-curricular links to the integrated STEAM learning method, an educational approach that uses five equal pillars of learning as access points for guiding student enquiry, dialogue and critical thinking: (Science, Technology, Engineering, Art and Mathematics). Each activity is clearly marked as relating to one stream or more. Note that given the context of being focused on an art exhibition, the Arts stream is relatable throughout. There are also extra suggestions of disciplines to connect to and reference, such as geology, architecture, history and geography.

Activities have been chosen due to their process-based methods, using materials that are easily available in schools or in the immediate surroundings. They all share a hands-on approach, focused on experiential, improvised learning. Every student will have a different outcome from working through the activities, based on their areas of interest, which aids creative learning exploring real-life experiences of a variety of subjects.

About
*From Spark
to Spirit*

From Spark to Spirit is a major exhibition at JAX District, Riyadh running from November 3, 2022 to February 4, 2023. It includes artworks by artists from Saudi Arabia and across the world, that explores the medium of light as it has shaped the perceptual, architectural, and social structures that inform our past and predict our futures.

The curatorial team, led by Neville Wakefield and supported by Gaida AlMogren have divided the exhibition into three rooms, along the themes of 'Technologies of Light', the 'Architectonics of Light' and 'Consciousness of Light'. These three strands help structure the ideas presented by the artworks on display. The exhibition begins by telling the story of the important role light has played in advancing technology and communication, from its first spark as a flame or lava, to today's digital revolution, introducing the concept that light is 'the new ink'. It goes on to explore the spaces that light creates and how we interact, and finally the connections light can make between us and urgent social, political and ecological issues.

There are several generations of artists represented in the exhibition. Some artworks are by important artists from the Light and Space Movement in the US, who started to use new materials such as fluorescent light bulbs and LEDs to create installations in the 1960s and 1970s. Others are by artists based in Europe and the US who have spent several decades investigating how we interact with light; the impression light has on different materials and how it connects to nature. Many artworks utilize complex, cutting-edge technologies and the artists work with highly skilled technicians to create their artworks.

Some artworks are made by artists who work together as a collective, such as Theories of Imagination (TOFI) from Bahrain and UVA from the UK. A lot of the artworks were made especially for the exhibition, including many by artists living and working in Saudi Arabia such as Moath Alofi, Dr. Zahrah Al Ghamdi and Maryam Tariq. Others live elsewhere but have responded to the context of Saudi Arabia in their artworks, such as Refik Anadol and Huda Al-Aithan. Others are loan artworks that have been displayed in other contexts, such as *Little Lights* by Jac Leirner, *Blooms* by John Edmark from the US and *A Dyson Sphere for Schumann Resonances (Solar Symphony 13)* by Haroon Mirza from the UK. They all come together to present one shared narrative.

Some facts about light



Throughout history, scientists have debated the nature of light.



To begin with, it was related to an understanding of what we can see, or the theory of vision.



The study of light is known as optics.

The main source of natural light on Earth is the Sun.



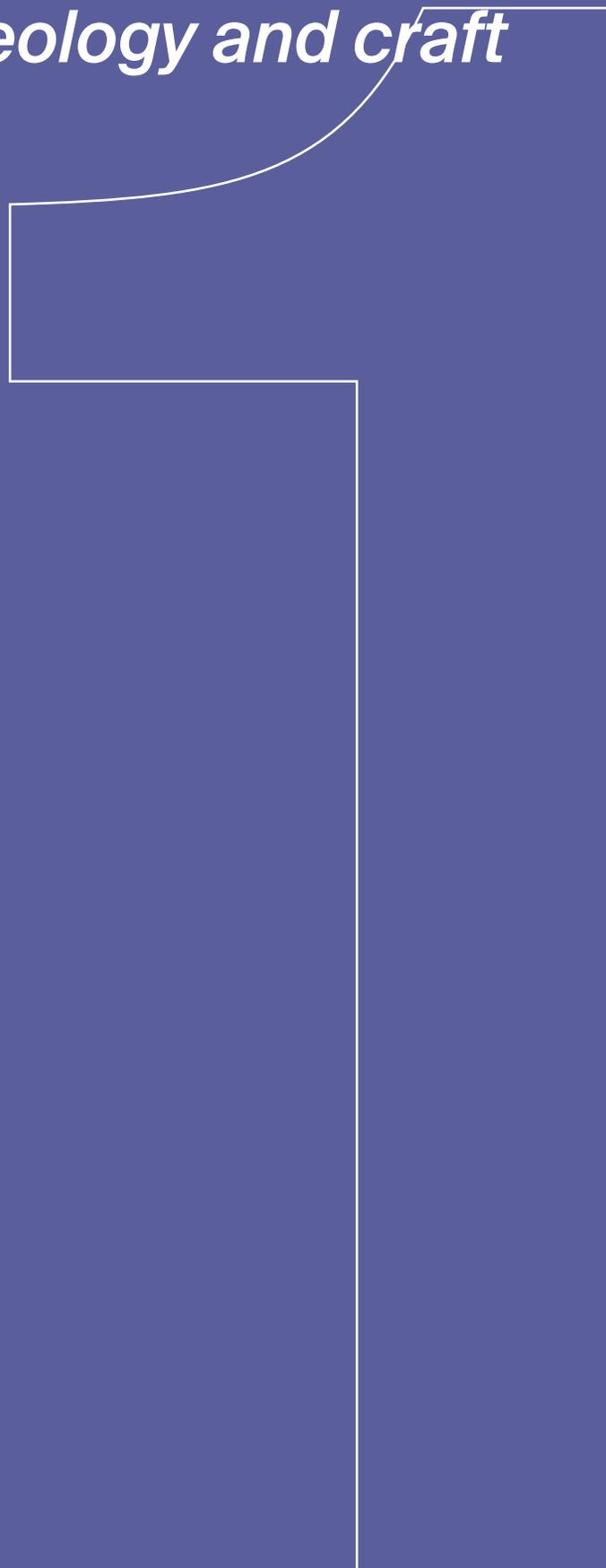
The Ancient Greeks believed that everything was composed of 4 elements: fire, air, earth and water. A group known as the Atomists proposed the idea that the physical universe is composed of fundamental indivisible components known as atoms. The mathematician Euclid (approx. 300 BC), studied the properties of light, discovering it traveled in straight lines.

Abu Yusef Yaqoub ibn Ishaq Al-Kindi (805-873), the first great philosopher of the Islamic era, explained concepts such as reflection, refraction and shadows, believing light traveled as a cone of continuous radiation.

Another important source of light since the Stone Age for humans is fire, still used today, although since the development of electric lights and power systems, electric light has mostly replaced firelight.

Today light is all around us: too much so. The majority of the places we live (80% of the globe) suffer from severe light pollution, caused by excessive artificial lights, which has a disruptive effect on natural cycles and inhibits the observation of stars and planets.

Formations: archaeology and craft



*Connections to: technology,
geology, architecture, literacy*

Moath Alofi
Thnan
2022

Moath Alofi, who was born in 1984 in Riyadh, Saudi Arabia, where he resides and works, is an artist, researcher and explorer. He is the founder of the creative studio Al-Mthba and a member of the Erth Team, a production company specializing in safari tours, aerial photography, and travel documentation. After receiving a BA in Environmental Management and Sustainable Development from Bond University in Gold Coast, Australia, he returned to his birthplace, only to encounter culture shock in his own village. The difficulties of adaptation compelled him to create, and photography became his adjusting mechanism. Since 2013, Alofi has embarked on a voyage of photographic documentation, using the holy city as both his studio and an open museum. He has moved on from focusing on cultural items, history, and hidden gems to photographing and exploring the larger Medina Region, in both its rural and urban splendors. He says he wants to expand his creative adventures to the whole Kingdom of Saudi Arabia. He has shown his artwork in Jeddah, Riyadh, Dammam, Bahrain, Oman, Dubai, Abu Dhabi, London, Paris, Bruxelles, Moscow, New Mexico, Utah, Seoul, Kuwait, and Davos during the course of his creative career. He was also invited to curate exhibitions such as *Bridges to Seoul* in Seoul for the visit of crown prince Mohammed bin Salman in 2019 and *Naphtha* in Jeddah by the Ministry of Culture in the same year.

Dr. Zahrah Al Ghamdi
soliloquy
2022

The work of Dr. Zahrah Al-Ghamdi, born 1977 in Al Bahah, Saudi Arabia, investigates memory and history through traditional architecture in both medium and assemblage. Her site-specific artwork demonstrates the arduous and exacting method by which she assembles bits of soil, clay, pebbles, leather, and water. The idea of “embodied memory” affects both the medium and the way the artist makes art in order to show and explain issues of cultural identity, memory, and loss. Al-Ghamdi was raised in the southwest of Saudi Arabia. She subsequently traveled to Jeddah, where she graduated from King Abdulaziz University with a bachelor’s degree in Islamic Arts. She has a Master’s in Contemporary Craft from Coventry University, UK, where she also earned her doctorate in Design and Visual Art. Her thesis examines traditional residential architecture in modern contexts in southwest Saudi Arabia. The fact that she grew up in that area and was surrounded by traditional Aseeri architecture had a big impact on her art.

Huda Al-Aithan
Numinous Najd
2022

Huda Al-Aithan is a multidimensional 3D designer and an instructor with creative work spanning multiple disciplines. She is currently an assistant professor of digital media at the American University in Dubai. She was born in Syracuse, New York in 1991 and was raised in Dhahran, Saudi Arabia. She obtained her MA and MFA in Three-Dimensional Design with a minor in Theater Arts from the University of Iowa. Her creative work is reflected in utilitarian products and three-dimensional installations. As she strives for meaning in her art, Al-Aithan explores shape, color and light as ways of communication. She employs harmony, repetition and organic shapes as instruments to communicate stories and create experiences, and has been recently been exploring the ideas of essence and identity through time. Growing up, Al-Aithan was surrounded by ideas, tales, and customs from the past. In her new works, she responds to the question “How can we conserve the beauty and essence of the past while reshaping it to adapt to the future?” As a designer and visual artist, she conveys her thoughts and replies via the colorful organic forms she develops.

Some facts about drawing	<p>The earliest drawings have been found in caves. Prehistoric cave paintings, known as parietal art, are drawings and pictograms decorating the walls of rock shelters and caves, made with paint made from dirt, ochre or charcoal.</p> <p>The earliest evidence of volcanic eruptions are those depicted in parietal art. These drawings were abstract representations, made by marks.</p>
What is mark-making?	<p>Mark-making describes the different lines, dots, marks, patterns and textures created in an artwork. It can be used to express feelings and emotions in response to something seen or felt. Mark-making therefore is a helpful tool for us to learn about our ancestors and what they experienced during their lifetimes. In our learning journey, mark-making is the first step in a child's developmental journey towards writing and drawing, directly connected to sensory stimulation and imaginary play.</p>
Why do we draw?	<p>In more recent times, drawings exist as an immediate and often primary creative output, used by artists, architects, engineers or even astronomers to present their initial ideas for a project which may later be executed in paint, or become a sculpture, building or machine. It can be done on the spot, on the move, with whatever materials you have to hand.</p>
Can I draw?	<p>Of course, everyone can! It is the perfect way to directly respond to visiting an exhibition, to sketch in front of artworks or when you get home, recording what you remember. Drawing is a tool we can all work with regardless of our age or level of experience, a mode of expression and a way to process your ideas freely. Encourage your students to travel with a notebook and pencil, so they can jot down ideas or sketches they have throughout their day. This can also be done on a tablet, but there is nothing better than the feel of pencil on paper!</p>
Speed art	<p>For fun, set your students the challenge of drawing portraits of one another within a limited time.</p>

Moath Alofi

Thnan, 2022

Year of Birth 1984

Nationality Saudi Arabia

Artwork Background Moath Alofi is from Medina, an area where there is the greatest concentration of volcanoes in Saudi Arabia. This new project is a direct response from visiting volcanoes at Khaybar.

Discussion Points What are the similarities and differences between charcoal and lava ash?

Charcoal is a lightweight black carbon residue produced by heating wood. It is one of the most elementary materials you can work with to create art, being very versatile, with unique qualities of revealing light, darkness and shadows.

Volcanic ash is a mixture of rock, mineral, and glass particles expelled from a volcano as it erupts, which can be harmful to human health.

Charcoal can be used to creatively represent lava ash.



Dr. Zahrah Al Ghamdi

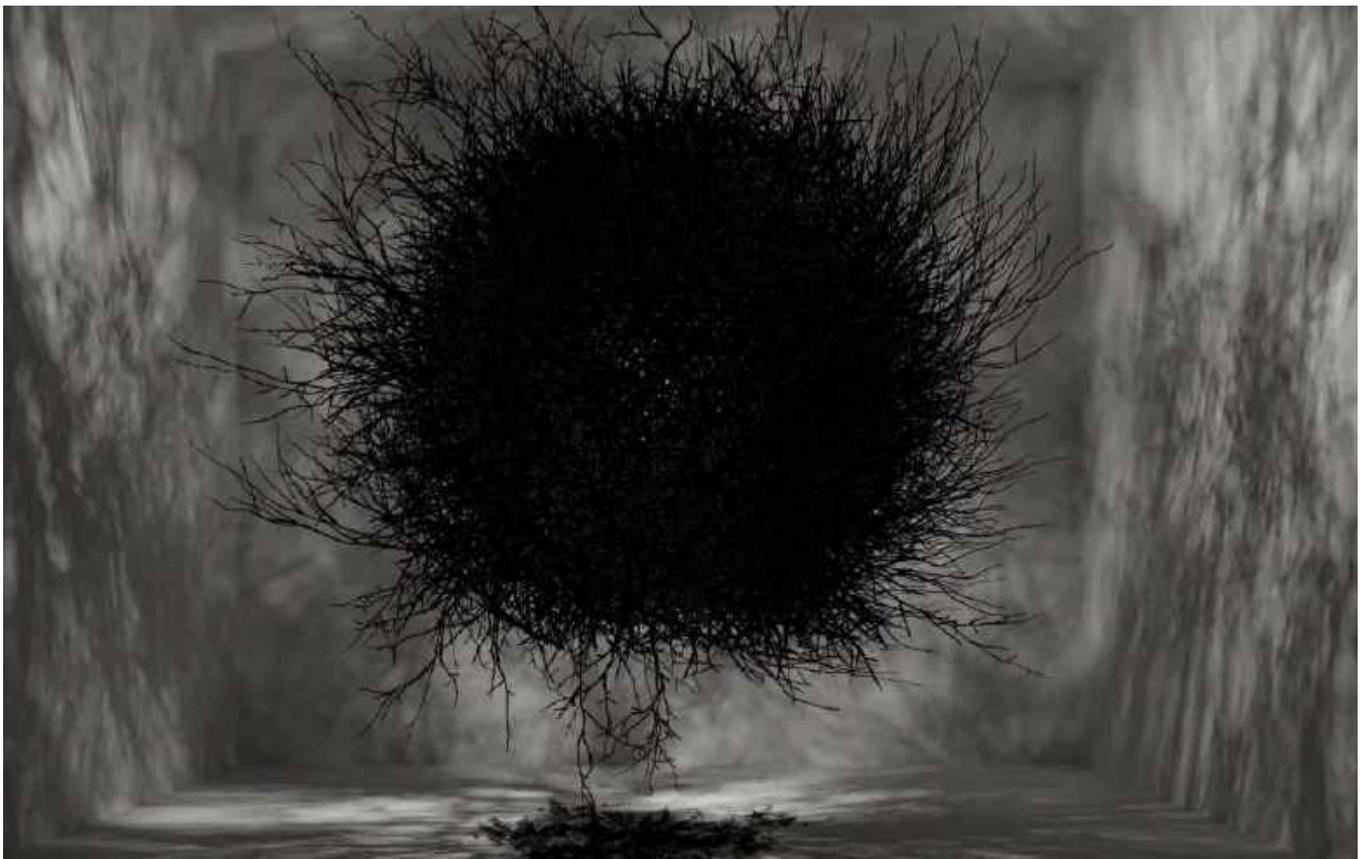
soliloquy, 2022

Year of Birth 1977

Nationality Saudi Arabia

Artwork Background In her artworks, Dr. Zahrah Al Ghamdi explores notions of memory and history, through meticulous assemblage of found, natural materials such as earth, clay, rocks, leather and water. For *From Spark to Spirit*, she creates a poetic response to the troubled relationship with the earth due to climate change, sending a clear message for us to use light to help build hope for the future.

Discussion Points What materials do you need to make an artwork?
Anything you can find, but the more sustainable the material the better!



Huda Al-Aithan

Numinous Najd, 2022

Nationality

Saudi Arabia

Discussion
Points

How can a building made of mud receive and emit light?
What was the relationship between natural light and early architecture?

Show your students some examples of Najdi architecture which has inspired this artwork, which is made of multiple light-emitting LED sculptures so it connects to our next theme.



Charcoal Experiments

Mark Making drawings

This activity relates to the work *Thnan*.

Materials

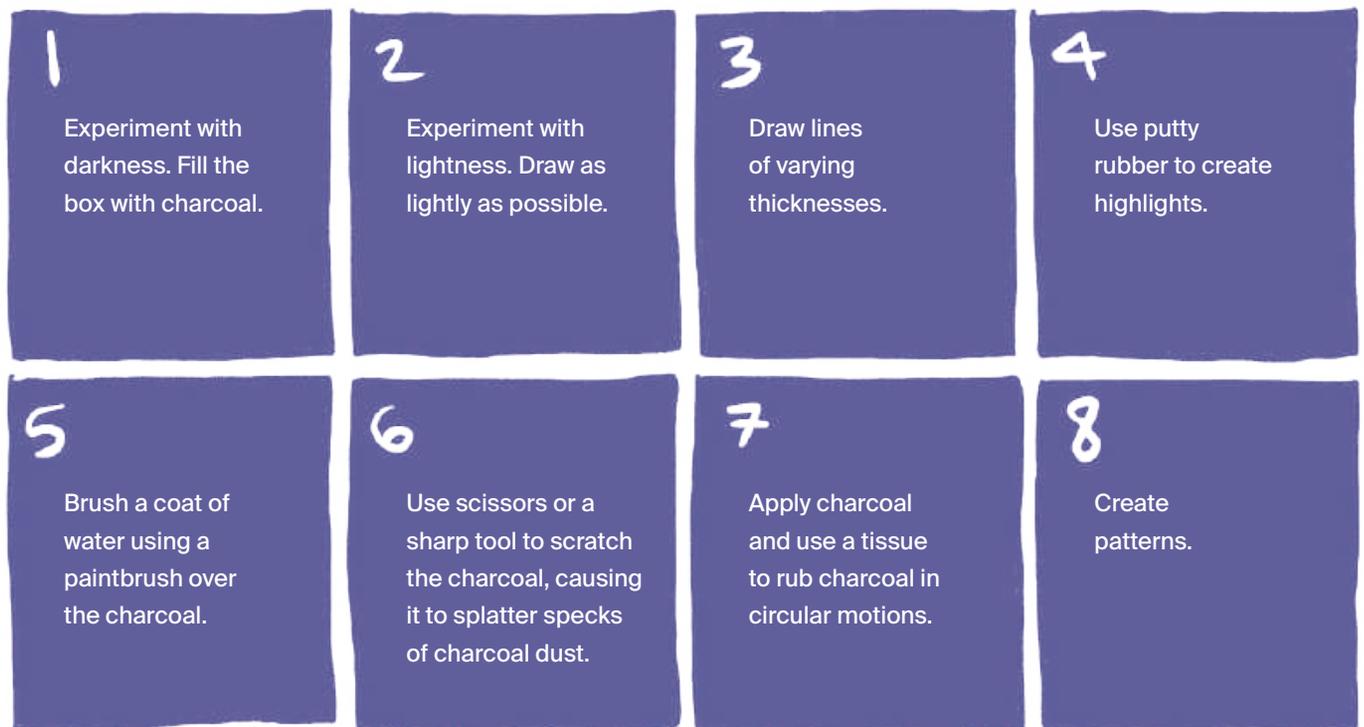
Charcoal
A3 paper
Scissors
Tissue

Paintbrush
Water
Putty rubber
A3 Cardstock

Method

Students prepare the paper:

1. Fold an A3 sheet of paper in half horizontally.
2. Unfold and fold again in half vertically.
3. Unfold and fold the right edge of the paper to meet the middle fold.
4. Repeat this step with the left edge.
5. Unfold to reveal eight boxes.
6. Each of these boxes will contain an experiment.



Mark-Making Drawings

Ask your students to imagine witnessing a volcano erupting.

What feelings does this evoke? How can they portray this in an abstract drawing?

Ask students to consider textures, marks, and lines.

How can you convey a sense of movement through lines and dots?

Sgraffito Mud Paintings

In this activity, inspired by *soliloquy*, we will be exploring sgraffito. It involves layering a surface and using a sharp tool to scratch the layers to reveal the lower layer. Clay is used as the canvas or surface for creating an artwork.

Clay is a natural material composed of minerals and is found worldwide, making it abundant and sustainable.

Materials

Sharp pointed tools (such as kebab sticks/ toothpicks/sharp pencil)	Acrylic paint Paintbrush Water Pencil Paper
Air dry clay	
Rolling pin	

Method

Teacher demonstrates how to create a clay slab (slab refers to the ceramics technique of rolling clay into a thin sheet).

1. Use a rolling pin to roll the clay into a smooth tile, constantly lift the clay after / each roll to avoid the clay from sticking and to ensure a smooth surface.
2. Use a sharp tool such as a bamboo skewer to cut the clay into the desired shape or use a ruler to cut an even square or rectangle.
3. Allow some time for the slab to dry. If it is too soft, the clay will deform. We want to catch it when it is 'leather hard', meaning it has some moisture but is not wet.
4. Once the clay is leather hard, apply layers of acrylic paint.
5. While the paint is drying, create a design template on paper. If the design is complex, you can trace it by placing it over the slab and drawing over the outlines.
6. Using a sharp tool such as a kebab stick, toothpick, or sharp pencil, begin to scratch the tile's surface.

Painting with Clay

If students have leftover clay from the previous activity, they can explore painting with clay inspired by *Numinous Najd*.

Method

1. Place a thumb-size amount of clay into a cup or container and soak it in water - just enough to cover the surface of the clay. This technique is known as Clay Slip (a mixture of water and clay with glue consistency generally used to attach two pieces of clay).
2. Using a paintbrush, continuously mix the clay and water until formed into a glue-like consistency.
3. On a sheet of cardstock, invite students to draw a structure inspired by Najdi Architecture - ask students to consider how light flows through these structures and how they would create window patterns.
4. Using the clay water mixture students paint structures on a sheet of cardstock.

Concluding Analysis



How can you compare drawings made using different mediums, such as charcoal and clay?

What might they represent in nature?

How do each of these materials play with light? Introduce terms such as transparency, translucency and opacity.

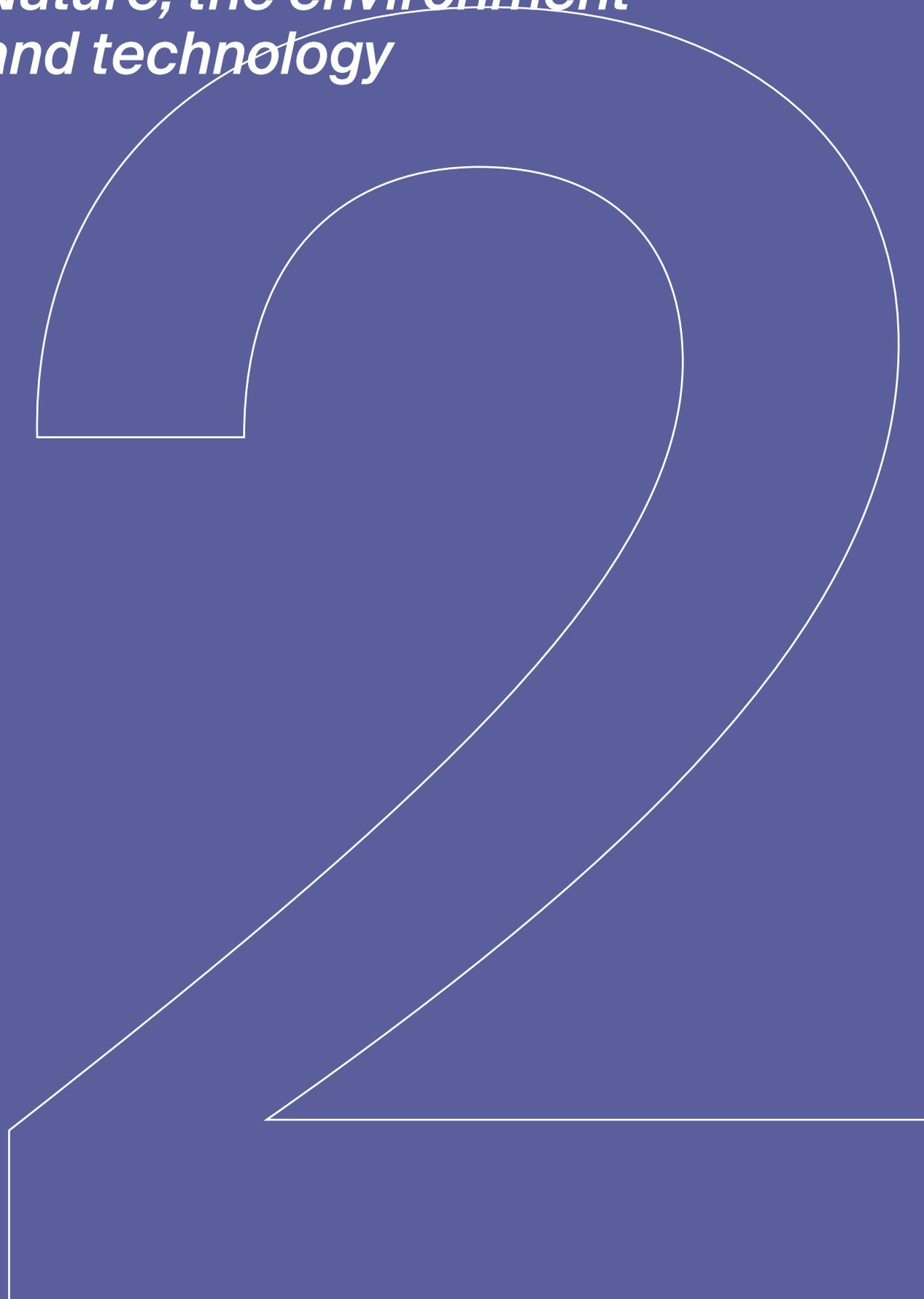
How do each of these artists explore light's natural and organic qualities?

These activities take us back to ancient civilizations - cave paintings found in volcanoes, the earliest dwellings of our ancestors and the findings of archaeologists.

Glossary: Theme 1

Geology	is a natural science which studies the structure of the earth, such as volcanoes and rock formations.
Sgraffito	is an Italian word meaning 'scratched,' a technique used in pottery, drawing and painting.
Najdi	is the traditional style of vernacular architecture specific to the center of the Arabian peninsula. It is recognisable by features such as triangular and square motifs cut into the mud brick to allow for better air circulation and to regulate sunlight.

Nature, the environment and technology



*Connections to:
Science, Engineering*

Lina Gazzaz
Converting Light Into Idea
2022

Lina Gazzaz is a professional artist working independently in Jeddah, Saudi Arabia. She holds a Bachelor of Studio Art from Meredith College in Raleigh, North Carolina. Many solo and group exhibitions in Saudi Arabia, the US, the UK, and the UAE have featured her work. She received the Painting Award at Dubai's Prophet Mohammed Festival. Her modern artwork critically connects with the figurative, the experimental and the Islamic. She uses Chinese ink on watercolor paper, ink, pastel and oil as her primary mediums. Current projects include collage, urban sculpture and video clips.

John Edmark
Blooms
2022

John Edmark is an artist, inventor and educator. His diverse body of work investigates and celebrates patterns arising from space, growth, motion, and light. He created the *Helicone*, an interactive kinetic desk toy, and *Bloom*, a new type of sculpture that comes to life when rotated under a strobe light. More than 60 million people have seen online videos of his artwork. His work has appeared in the New York Times, Core77, and Colossal, as well as on Science Friday on NPR. He has created interactive artwork for institutions such as the National Museum of Mathematics, the San Jose Museum of Art, Phaeno Science Center, and Swiss Science Center Technorama. He has been an Artist-in-Residence at AutoDesk and The Exploratorium. Before concentrating on art and design, he spent many years at Bell Laboratories investigating virtual worlds. He teaches at the Stanford University Design Program.

Maryam Tariq
Hivemind
2022

Maryam Tariq (born 1996) was born and raised in Yanbu, Saudi Arabia. She went to the University of Effat in Jeddah, Saudi Arabia, to study Visual and Digital Production. She now lives there and works as a light and three-dimensional mapping artist. Her surreal work explores underlying spiritual principles that shape nature and sacred geometry. Tariq debuted her own print, *The Golden Ratio*, in 2020 and lit up many music festivals and concerts, alongside DJs and producers, transporting the audience on immersive adventures that transform the music and vibrations into visual storytelling from her own invention. Her first solo show, *Remembering The Future* (2021), was held at Hafiz Gallery in Jeddah, Saudi Arabia. Her work was part of the group show *Re-appearing Imaginaries* (2022) at Riyadh's Misk Art Institute.

What is sculpture?	Sculpture is an art form that works in three dimensions. The main feature of a sculpture is the design which can be developed by modeling, carving or placing materials together. Artists often consider how forms extend through space and how the size, texture, light and color impact their sculptures.
What can it be made of?	<p>Sculptures consist of many mediums that can be made from paper, clay, plaster, stone, wood or any material the artist chooses to explore.</p> <p>Sculptural forms often replicate forms found in nature.</p>
Discussion Points	Introduce your students to ways in which artists in <i>From Spark to Spirit</i> have approached the theme light through merging nature and sculpture using diverse materials.

Lina Gazzaz

Converting Light into Idea, 2022

Nationality

Saudi Arabia

Artwork
Background

Lina Gazzaz uses the material of glass which is naturally transparent, to illustrate how light can travel through different materials and the effects that gives.

Observations

How different would the effect of her artwork be if she had chosen a different material?

How important is the transparent quality of the sculpture?



Glass melting colour movement, 2022. Copyright and Courtesy Lina Gazzaz

John Edmark

Blooms, 2022

Nationality

US

Artwork
Background

Artist, inventor and educator, John Edmark produces mesmerizing 3-D printed zoetrope sculptures, which move when spun under a strobe light. They illustrate the mathematical formula of the golden ratio ϕ , which replicates the beauty of nature.

He turns mathematics into magic!

Discussion Points

Consider how John Edmark used a 3-D printer to generate his sculptures.

3-D printing as a form of new technology removes hands-on processes from the act of creating an artwork. Ask your students if this changes the way they think sculpture can be made.

Despite being made with technology, its ideas and even look and feel is closely connected to nature.

What shapes and patterns can you find repeated in natural forms?



Maryam Tariq

Hivemind, 2022

Year of Birth 1996

Nationality Saudi Arabia

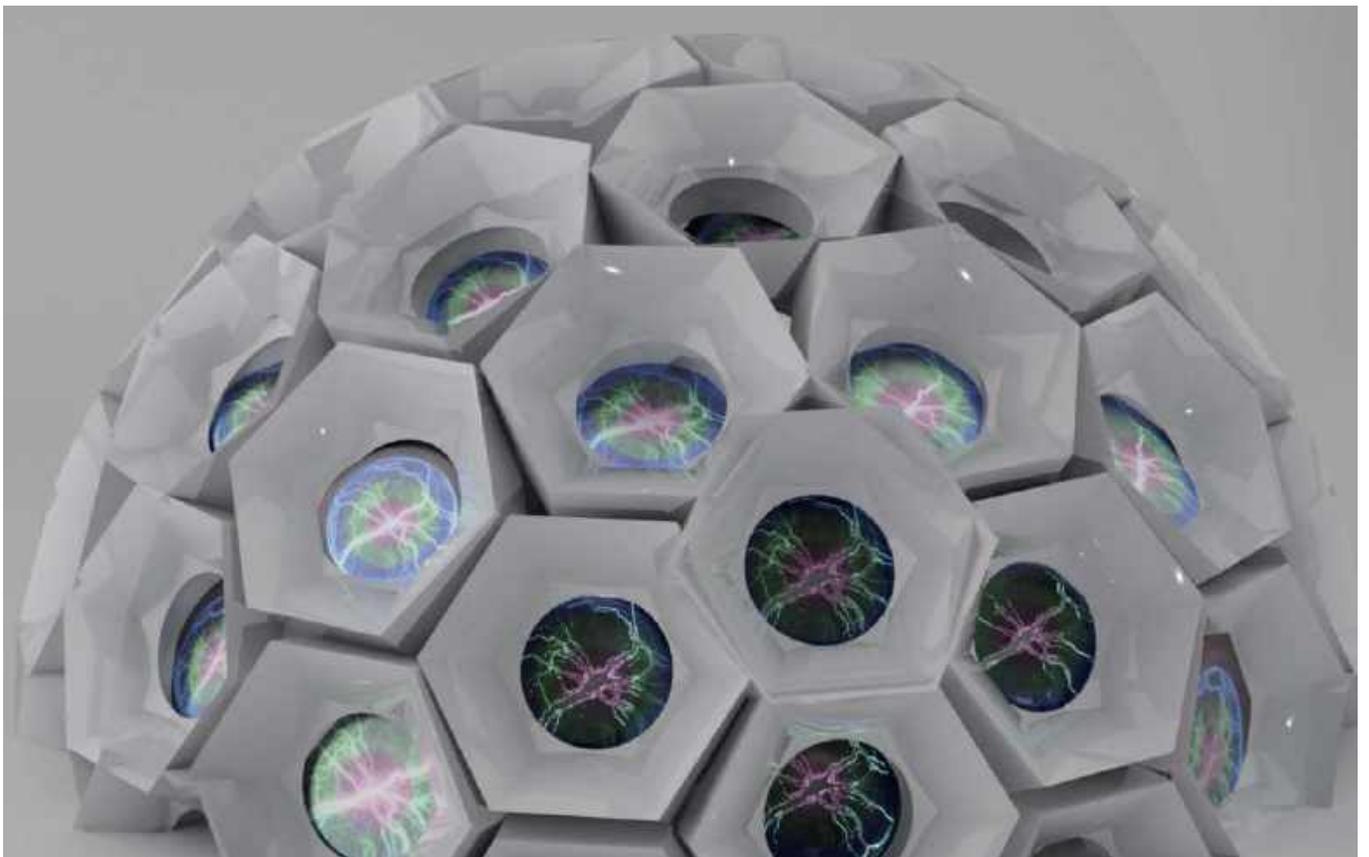
Artwork Background A different approach to working with new technology, this interactive sculpture consists of an aluminum structure housing multiple LED channels which refer to swarm intelligence.

Observations What shapes can you see in this artwork?

Fun Fact The hexagon forms mimic patterns found in nature, like honeycomb.

Hivemind suggests the unity and group decision making concept that is present in the life of bees.

Does each area of the sculpture seem independent or are they part of a whole?



Organic Sculpture

Classroom Activity I

Materials

ModRoc
Heavy-weight paper
Or cardboard
Watercolors
Paintbrush

Scissors
Bowl of water
Water cup
Objects from nature

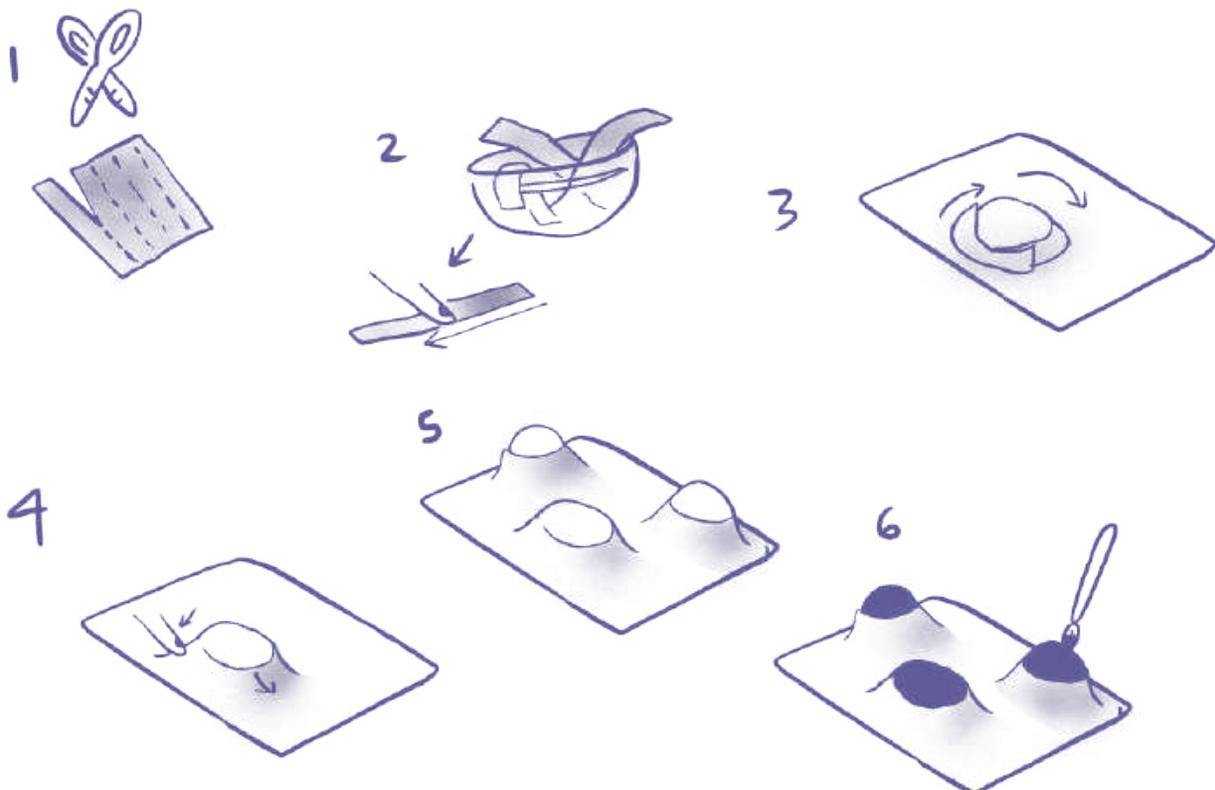
Modroc (or mod roc) is another name for **plaster impregnated bandage**, and it can be used to make sculpture by even very young children or by older children or adults who enjoy its versatility. Modroc starts off dry, you then dip it in water and can model with it.

Method

Ask students to gather natural materials such as rocks, pebbles, stones, twigs or bark.

Demonstrate placing the objects on paper or cardboard and arrange them in patterns.

1. Using scissors cut the ModRoc into strips.
2. Dip the ModRoc into a bowl of water and use your fingers to smoothen the strips, removing any excess water into the bowl.
3. Place the ModRoc around the arranged objects taking impressions of their structures.
4. Use fingers to rub the ModRoc, smoothing out any holes.
5. Repeat the process until all found objects have been layered with ModRoc.
6. Once the ModRoc has dried, paint the Organic Sculpture using watercolors.



Soap Sculptures

Classroom Activity II

This activity holds similarities to the aesthetic qualities of John Edmark's artworks, however, the process is very different. In this activity, we will look at pieces such as *Blooms* for inspiration in curves and structures, but we will be using the process of carving.

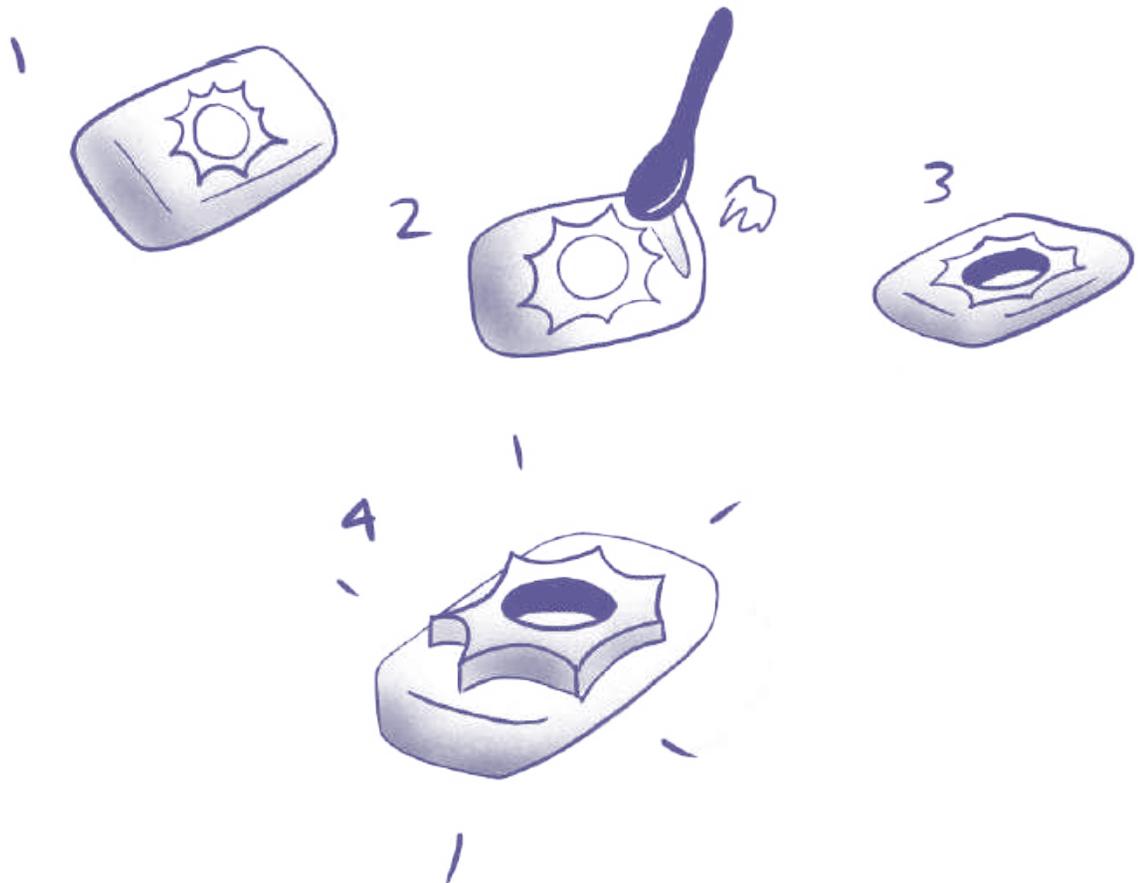
Materials

Bar of soap
Spoon
Scissors
Paper
Pencil

Method

1. Demonstrate by drawing a design/ structure using a sharp pencil on either side of the soap bar.
2. Experiment with the tools and carve through the soap.
3. Use scissors to cut through the soap to have areas that are hollowed out.
4. Continue to smooth the soap by using any one of the tools.

Remember that for the majority of these activities, no one outcome will be the same!



Concluding Analysis



How do these three artists use materials to explore form, color and movement?

Observe the space around you. Are there any sculptural qualities that you can identify?

Glossary: Theme 2

Golden ratio	used in mathematics, it is the irrational number approximately 1.618, represented by the Greek letter ϕ and represents the connection between two aspects of an object. It is also called the Fibonacci sequence and it can be found across all of nature: plants, animals, weather structures, star systems – it is ever-present in the universe.
Zoetrope	a device invented in the 1800s that produces the illusion of motion by displaying a sequence of images, it was frequently used before the invention of animation and moving film.
Swarm Intelligence	the collective behavior of a group who share knowledge, opinions or way of behavior, the term was invented in 1989 in the field of Artificial Intelligence (AI).

Geometry

Exploring further the geometric forms we found in nature in the previous theme, here we delve deeper into the mathematical properties of different shapes and patterns, learning about the act of printmaking and the valuable use of repetition in artworks.



*Connections to:
Mathematics, Science*

Walaa Fadul
Light Upon Light
2022

Walaa Fadul is a visual communicator with an artistic spirit. She has a master's degree in Humanities and Social Sciences in Graphic Design from The University of Edinburgh, where she studied art and design. She thinks that we are matter and matter is us. Two identical surfaces, two structures that are diametrically opposing. The first is created, whereas the second is produced. One is living, while the other is not. The first is forced onto the emptiness, whereas the second creates it. Thus, she refers to herself as a raw material that existed via her comprehension, a substance with the capacity to construct notions through 'meanings'. Her artistic approach explores materials as both the boundary and the point of communication. Michelangelo said that when he looks at raw marble, he sees a character yearning for independence. According to Fadul, everything we interact with bears emotions, memories, and meanings similar to our own.

Nasser Alshemimry
Inner Light
2022

Nasser Alshemimry is an audio-visual artist who goes by the alias DesertFish. This alias represents his Najdi roots and life on the Red Sea Coast. Based in Jeddah, Saudi Arabia, he practices multidisciplinary digital arts in his studio, "Desert. Dream Audio Visual," serving art galleries, corporations, and artists as a modern audiovisual agency that provides niche technical consultation services and media composition. After serving the art scene as a consultant, Nasser started creating his own audio-visual pieces with the aim of presenting audio-visual art in a new light in the region, focusing on human awareness of space and time and the human condition in relation to technology. From the visual side, Alshemimry is delving deep into the world of interactive art through self-taught graphics processing. He aims to create works that are driven by computers in real time, creating harmony between technology and human interaction.

Zarah Hussain
Numina
2022

Zarah Hussain (born in 1980) has participated in over 15 national and international exhibitions. She is a British Muslim artist who received an MA in Islamic art from the Prince's School in 2004. She has transformed her work into a visual examination of how spirituality, technology and art connect. She integrates the pattern-making abilities of conventional mathematics with modern art across a variety of genres, including animation, sculpture and painting. Since then, Hussain has established a creative language that reflects both the aesthetic traditions of her ancestry and modern Western society. Hussain combines Islamic art references such as geometric structures, tessellating patterns, and motifs based on regular and sub-regular grids shapes with inspiration from the work of 20th century artists such as Victor Vasarely, Josef Albers, Mark Rothko, Agnes Martin and Bridget Riley.

About Printmaking

Printmaking is an artistic process that involves transferring images or lines from one surface to another to produce a series of prints. A print is created not by drawing directly on the image surface but through an indirect process that is usually transferred onto paper. There are many different materials used in printmaking such as metal, wood, linoleum, glass and fabric. Traditional techniques include woodcut, etching, engraving and lithography, today the most popular form used by artists is screen printing. It differs from painting or drawing as more than one copy can be produced.

Walaa Fadul

Light Upon Light, 2022

Nationality

Saudi Arabia

Artwork
Background

Through using a holographic LED fan, the artist creates a layered, dynamic geometric form, which illustrates the unique qualities of light and color.

Observations

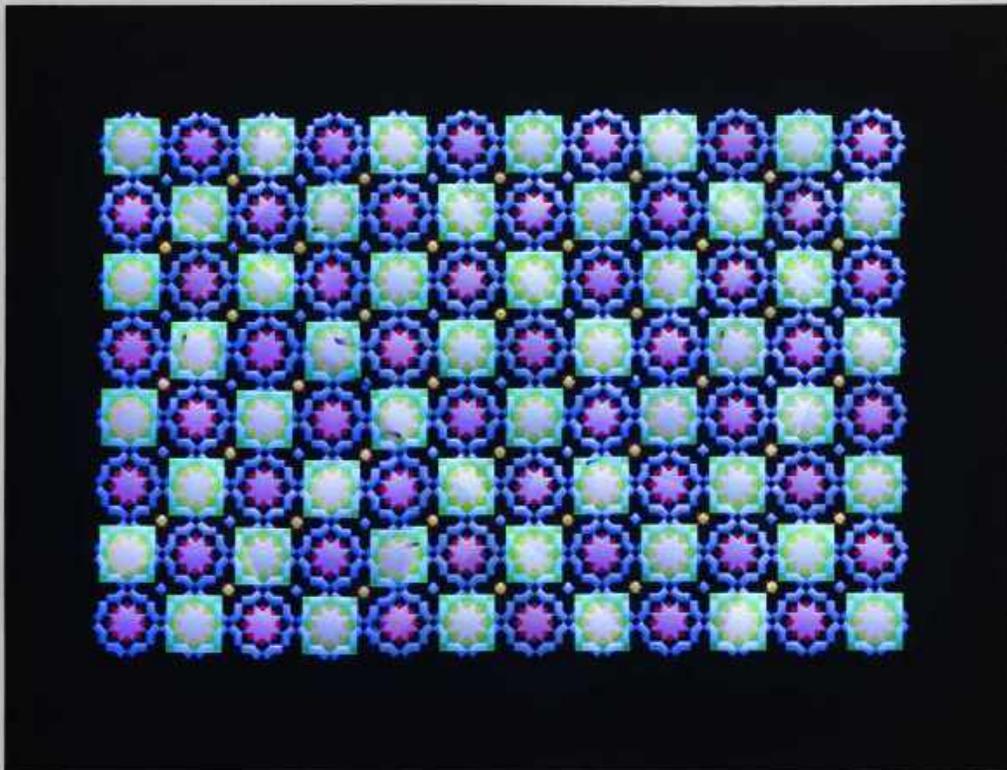
Can you find any repeating geometric patterns in your sightline? It could be on clothing, on the floor, outside the window.

How observant are we of our immediate surroundings?

If you close your eyes, can you answer simple questions about what color the wallpaper of the classroom is, or whether you can describe the path you took to get to your seat? How much harder is it to answer those questions when you remove light?

Discussion
Point

Can light be present in the same way in both the virtual and physical worlds?



Nassir Alshemimry

Inner Light, 2022

Nationality

Saudi Arabia

Artwork
Background

An audio visual artist who also goes by the alias DesertFish (referring to his Najdi roots and life on the Red Sea coast). His piece is interactive and multi-sensory, presenting what appears to be an optical illusion. The tesseract is a shape that only theoretically exists in mathematical models, but as we see here, it can be visualized in two and three dimensions as a large cube with a smaller cube inside it, connecting the corners with a line.

To Consider

Can you think of something that you thought was impossible and then heard that it happened?

Side Discussion

Introduce your students to the structure of DNA and the study of genetics.



Zarah Hussain

Numina, 2022

Year of Birth 1980

Nationality UK

Artwork Background There is a direct connection between science and spirituality in this artwork. The title translates as 'divine presence' and yet the patterns illuminated in the projection are mathematical, tessellating shapes on a hexagonal grid.

The patterns which have been seen in sacred scripts and architecture across the Islamic world are today being translated by digital technology.

To Consider Is there a difference in how we respond to a work of art when it is static on a page, as opposed to being animated as a projection?

Infinite repeating patterns can lead to reaching a meditative and transcendent state. Is this a reaction you were anticipating when studying art?



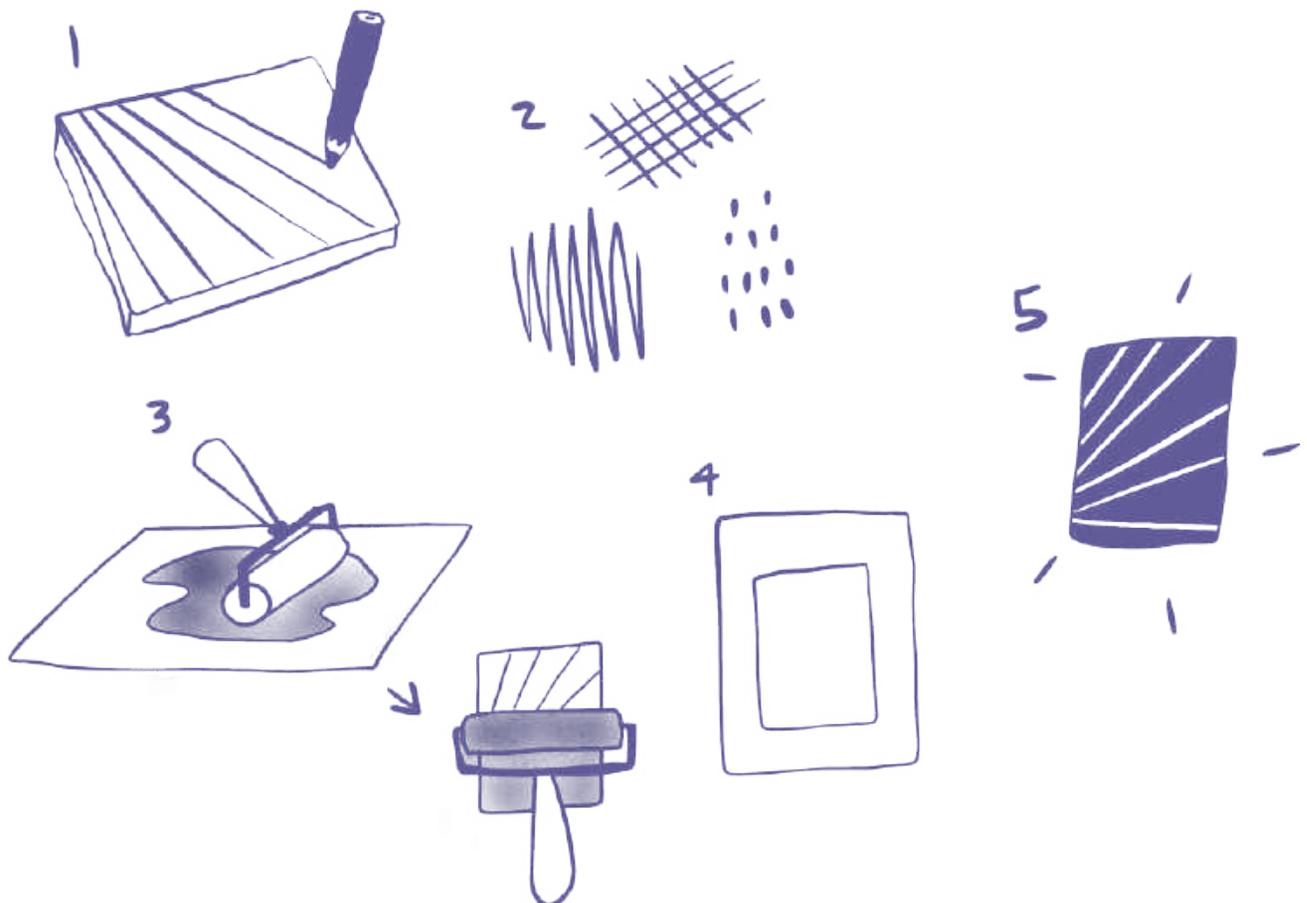
Installation view, *Numina*, Barbican Centre, London, 2016- 2017. Copyright and courtesy Zarah Hussain and Barbican Centre, London

Foam Prints

Materials	A5 Foam Sheet	Palette
	Pencil	Roller
	Pencil Sharpeners	Paper
	Water-based printing ink	

Invite students to examine the work of Walaa Fadul, Nasser Alshemimry and Zarah Hussain.

- Method**
- Demonstrate the process of foam printing.
1. Using a sharp pencil, draw geometric patterns inspired by the artworks on a foam sheet.
 2. Encourage students to press the pencil firmly as they draw—experimenting with various marks on the foam sheet to add depth to the print, such as crosshatch, scratches and dots.
 3. Once they have completed their drawings, squeeze a small amount of water-based printing ink onto a palette and use the roller to roll the ink onto the foam sheet.
 4. Print your image by firmly pressing the foam sheet over a sheet of paper.
 5. Reveal your geometric-inspired foam print by carefully removing the foam sheet away from the sheet of paper.



Paper Fold Prints

Classroom Activity II

Materials

White origami paper	Acetate sheets
Thick cardstock/ foam board	Hair dryers
A4 Foam sheets	A3 paper
Foam roller	Pencils
Printmaking baren	Sharpener
Water-based printmaking ink	Glue gun (for instructor use only)

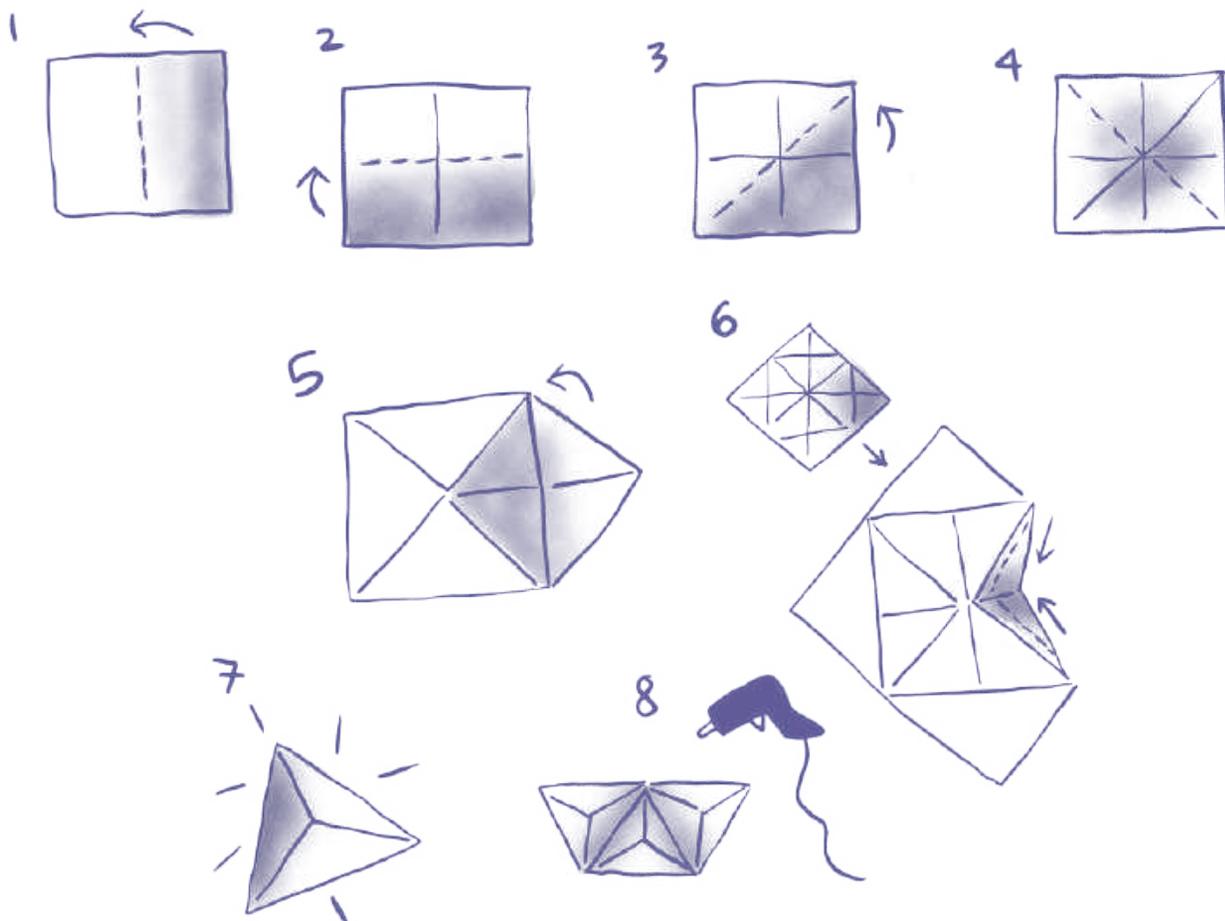
Method

1. Ask students to draw repeated patterns inspired by Zarah Hussain's work on the foam sheet.
2. Create foam prints from the activity above.
3. Once patterns are complete use the roller to distribute printmaking ink onto a palette until the roller is evenly coated with ink.
4. Ink the foam sheet using the roller.
5. Place the inked foam sheet over a sheet of white origami or square paper.
6. Use the baren to press the foam firmly onto the paper.
7. Carefully remove the origami paper from the foam to reveal your print.
8. Repeat until 4-6 sheets have been printed.
9. Dry the papers if necessary using a hair dryer.
10. Once the square paper has been printed, students will transform them into three-dimensional paper folds.

Paper Fold Steps

Demonstrate the following steps to the students:

1. Fold the paper in half into a rectangle, and unfold.
2. Fold the paper the opposite way into a rectangle, and unfold.
3. Fold the paper diagonally in half into a triangle, and unfold.
4. Repeat until the opposite side is folded into a triangle.
Now all the primary folds are complete.
5. Pinch the paper on either side of one diagonal crease. Four triangles should begin to form.
6. Move your fingers inwards and the paper should collapse into three sides shaped like triangles.
7. Flatten the paper down into one triangle shape.
Students will create 4-6 origami triangles from their printed paper.
8. Once they've completed their paper sculptures, the instructor will place hot glue on the corners of the sculptures and stick them to the foam board/cardstock in a connecting pattern.



Glossary: Theme 3

Hologram	represents a recording of information regarding the light that came from the original view as scattered in a range of directions rather than from only one direction, as in a photograph. This allows the view to be seen from a range of different angles, as if it were still present.
Tesseract	a geometric shape that exists in the fourth dimension, also called a hypercube, it can be found in the structure of DNA and sacred geometries.
Islamic Geometry	refers to the geometric designs found in Islamic art which are built on combinations of repeated squares and circles which may be overlapped and interlaced to form intricate and complex patterns.

Concluding Analysis



How do these three artists explore geometry and light?

Are there any similarities between these artworks?

How would you describe their choice of materials?

How do the paper sculptures employ methods that explore form, color and movement?

How does the use of color and geometry influence the construction of these sculptures?

Materiality

Several artworks in the exhibition explicitly relate and comment on the discovery of electric light and ongoing inventions in the field of optics. They go on to create large-scale installations.

*Connections to:
Physics, Engineering, History*

Jac Leirner
Little Lights
2005 – 2022

The creative output of Jac Leirner begins by incessantly collecting and serially arranging materials according to certain organizational needs, utilizing a conceptual and complex vocabulary. This inventory includes a variety of items, including silverware, cigarette butts, tools, rulers, cash and bags. These commonplace things undergo a reconfiguration based on a semantic and narrative displacement effected by the artist, who applies a deep awareness to the formal features of objects, such as shape, color and typefaces, in the creation of the work. Leirner's work is appealing due to its repetition and the slowness of its creation; materials may take decades to acquire, yet a piece may be created quickly.

Haroon Mirza
A Dyson Sphere for Schumann
Resonances (Solar Symphony 13)
2021

Haroon Mirza (born in 1977) lives and works in London, UK. Mirza's work investigates the interaction and friction between sound and light waves and electric current. He creates sculptures, performances and immersive installations that probe an individual's knowledge of their own experience. As a proponent of interference (in the sense of electro-acoustic or radio disturbance), he deliberately crosses wires. He describes his role as a composer, manipulating electricity, a living, invisible and ephemeral phenomenon, to make it dance to a different tune and calling on instruments as diverse as home electronics, vinyl and turntables, LEDs, furniture, video footage and existing artworks to behave differently. Mirza invites us to examine the perceptual boundaries between noise, sound and music and calls into question the classification of cultural forms. Recent solo exhibitions were held at CCA Kitakyushu in Kitakyushu, Japan (2020), John Hansard Gallery in Southampton, UK (2019), Australian Centre for Contemporary Art in Melbourne, Australia (2019), Sifang Art Museum in Nanjing, China (2019), Ikon in Birmingham, UK (2018), and Asian Art Museum in San Francisco, California, US (2018). LiFE, Saint-Nazaire, France, and Contemporary Art Gallery, Vancouver (2017). Among other prizes he was awarded the Silver Lion at Venice Biennale (2011) and COLLIDE International Award (2017).

UVA
Hidden Order
2022

UVA (United Visual Artists) is a London-based collective founded in 2003 by British artist Matt Clark. UVA's diverse body of work integrates new technologies with traditional media such as sculpture, performance and site-specific installation. Drawing from sources ranging from ancient philosophy to theoretical science, their practice explores the cultural frameworks and natural phenomena that shape our cognition, creating instruments that manipulate our perception and expose the relativity of our experiences. Rather than material objects, UVA's works are better understood as events in time, in which the performance of light, sound and movement unfolds. UVA's work is exhibited and collected globally, including: London: Barbican Curve Gallery, Royal Academy of Arts, Serpentine Gallery, The Wellcome Trust, Victoria & Albert Museum, 180 Studios (in collaboration with Fondation Cartier Pour L'art Contemporain) and internationally: Sydney Biennale 2022, YCAM, Japan, Seoul Museum of Art, Korea, Park Avenue Armory, New York, Power Station of Art, Shanghai, China.

Jac Leirner

Little Lights, 2005–2022

Nationality

Brazil

Observations

What lies in between the plug socket and the lamp in this installation? 4000 meters of electric wire.

It is fulfilling a function, connecting the two, but seems strangely long and unnecessary.

Discussion Points

Have you ever found an old phone, camera or video game that your parents or older generation have kept? They can sometimes seem ridiculous.

Find one and learn a fact about how it worked.

It is sometimes hard to grasp the speed at which the development of technology is moving - almost as hard as it is to detect the speed of light (approximately 300,000 kilometers per second).

The artist focuses her work mainly on reuse, assemblage and categorizing found objects to create an archive that documents our present moment for future generations.



Jac Leirner, *Little Lights*, Installation view: Le Grand Cafe - Centre d'Art Contemporain, Saint-Nazaire, 2005. Copyright and courtesy Jac Leirner, Esther Schipper, Berlin/Paris/Seoul, Le Grand Cafe - Centre d'Art Contemporain, Saint-Nazaire

Haroon Mirza

A Dyson Sphere for Schumann Resonances (Solar Symphony 13), 2021

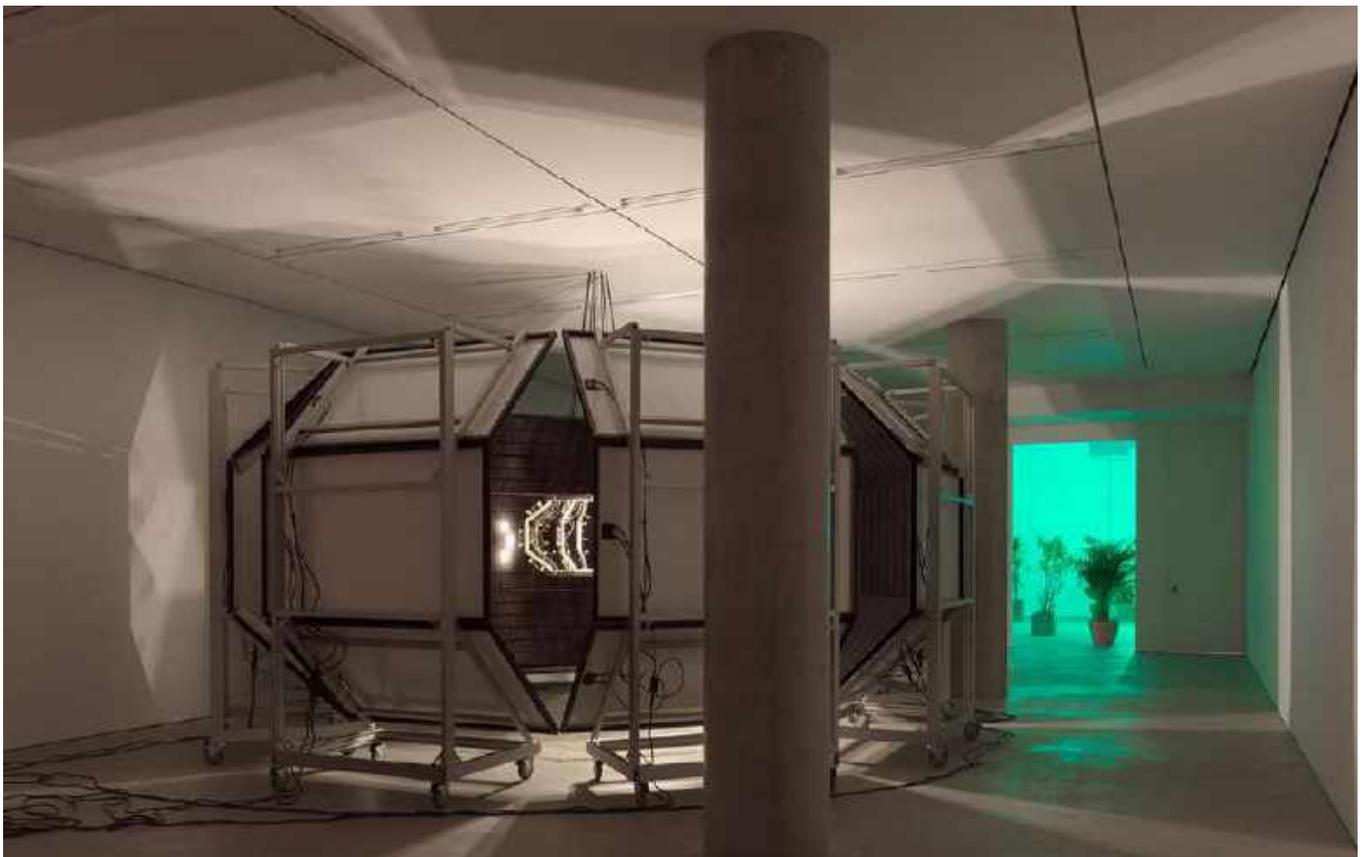
Year of Birth 1977

Nationality UK

Artwork Background Always testing the interplay of sound, light waves and electric current, this immersive installation connects human needs, energy from the sun and science fiction.



Compare the use of minimalist lines in both these works, which share the use of electrical wires.



Installation view: *For a Dyson Sphere*, Lisson Gallery, New York, 2022. Copyright and courtesy Haroon Mirza and Lisson Gallery, London/ New York/Los Angeles/Shanghai/Beijing

UVA

Hidden Order, 2022

Nationality

UK

Artwork
Background

UVA is short for United Visual Artists, a collective based in London founded in 2003 by British artist Matt Clark. They create what they call 'events in time' - merging new technologies with sculpture, performance and site-specific installation, inspired by science, philosophy and nature.

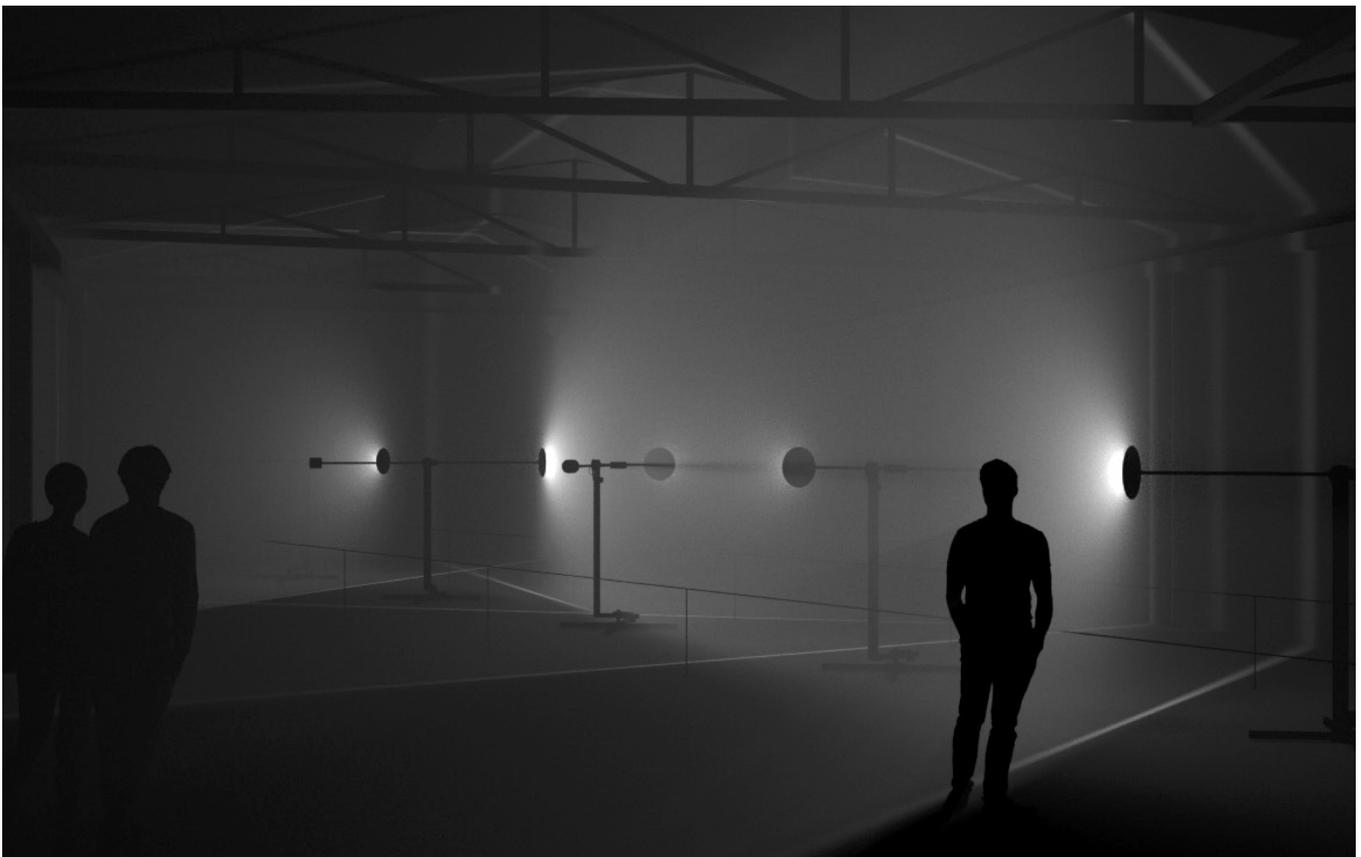
Discussion Points

Can you find any visual parallels with the shapes created in this installation to the artworks we were looking at in Theme 3?

UVA use geometric patterns to help define the space of their artwork.

They employ linear perspective, inspired by artists and architects from the Renaissance.

Their work can also be understood in the field of programmable architecture, when buildings are simulated using computer software.



Line and Repetition

Classroom Activity I

These three artworks naturally lead to a study of creating an electric circuit, and teaching the class about conductors, waves and currents. Here is a simple activity that helps explain these concepts.

Materials

String
Pins
Foam board
Ruler
Pencil

For children under eight they can use toothpicks instead of pins.

Method

1. Create symmetric points using the ruler and pencil on the foam board.
2. These points can be triangular, squares, or rectangles as long as they are evenly spaced.
3. Push the tips of the pins into these points, ensuring they are stable.
4. Now use the string to connect each point.
5. Twist the string around the pins to secure them.
6. Repeat this activity using another pattern.

Note

This activity can be completed as a collaborative process with a large sheet of foam paper. Each student draws horizontal points which can make up a pattern. Students alternate between each pattern.

Make a robot assemblage!

Materials

Recycled materials

(brought from home, such as cans, cereal boxes and water bottles)

Stickers

(felt pieces, foil or pieces of material)

Decorating tools

(such as coloring pens, oil pastel)

Scissors

Glue gun

Tape

Plastic screws

Paper clips

Split Pins

Method

Ask your students to select materials to create a basic shape for their robots.

Allow them to cut, mold and create their own assemblages, using the resources available.

A more advanced lesson could introduce ideas of basic robotics and coding.

Glossary: Theme 4

Assemblage	art that is made by assembling disparate elements, often everyday objects, usually three-dimensional, similar concept to a collage and the readymade.
Electricity	a fundamental form of energy that occurs naturally (as lightning) or is produced (as in a generator) and that is expressed in terms of the movement and interaction of electrons. It is also the term used for an electric current or power.
Perspective	the representation of three-dimensional objects or spaces in two dimensional artworks. During the Renaissance in Italy artists and architects started using linear perspective, the architect Filippo Brunelleschi in 1415, then Leonardo da Vinci and Albrecht Dürer in Germany and it has been a tool used by artists ever since.

Theme 5

Installation in the information age

In this final theme, we move beyond the three-dimensional world to something else. In the 21st century we are learning to adapt the skills and methodologies taught via Science, Technology, Engineering and Mathematics and work collectively in creative and artistic ways in order to combat difficulties we find in the world around us.



*Connections to:
Mechanics, Computer Science,
Technology, Data analysis*

Theories of Imagination
(TOFI)
Extrospection
2022

The artists Noor Alwan, a Bahraini national living in Bahrain, and Abdulla Buhijji, a Bahraini national living in Dubai, form Theories of Imagination, a multidimensional art collaboration with an artistic approach that is speculative, exploratory and whimsical. TOFI develops fantasized works of art and creative spatial perspectives rooted in cultural insights and research. The collective's work explores topics such as the link between the self and the other, individuals and their settings, and identity and memories across time. They function at the convergence of technology and art to develop interactive experiences that provide fun ways to perceive the present and future landscapes. Their interventions study and learn from human behavior, presenting tales on design fiction, and probing the near futures of a variety of issues via the lens of art. TOFI was commissioned by Misk Art Institute, Bahrain International Airport and the Bahrain Pavilion for the Dubai Expo 2020. As independent artists, Alwan and Buhijji showcased their work in Birmingham, Cairo, Manama, Paris, Riyadh and Sharjah.

Phillip K. Smith III
Flat Portal 4:1
2022

Phillip K. Smith III (born in 1972) grew up in the Coachella Valley of Southern California. He obtained his Bachelor of Fine Arts and Bachelor of Architecture at the Rhode Island School of Design. From his studio in Palm Desert, California, he makes light-based pieces that are inspired by concepts of space, shape, color, light and shadow, the environment and change. Smith's large-scale temporary installations such as *Lucid Stead* in Joshua Tree, *Reflection Field* and *Portals* at the Coachella Music and Arts Festival, *1/4 MILE ARC* in Laguna Beach, and *The Circle of Land and Sky* at the inaugural 2017 Desert X exhibition have been featured in hundreds of online and print publications. Grand Central Press's most recent catalog, titled *Five Pieces* features all of these installations. His public art can be found in cities such as Los Angeles, San Francisco, Kansas City, Nashville and others.

Refik Anadol
Machine Dreams: Space
2022

Refik Anadol (born 1985) is a media artist, filmmaker and pioneer in the aesthetics of artificial intelligence. Currently residing in Los Angeles, California, he is the owner and operator of Refik Anadol Studio and RAS LAB. The Studio's research practice focuses on researching and creating innovative ways to use data storytelling and artificial intelligence. Anadol teaches at the UCLA Department of Design Media Arts, where he received his second Master of Fine Arts. Anadol's body of work examines the difficulties and opportunities provided by pervasive computing, as well as what it means to be human in the era of AI. Now that robots dominate our daily lives, he investigates how our perception and experience of time and space are shifting drastically. Anadol is attracted by how the digital era and machine intelligence provide a new aesthetic method for the creation of immersive places with a dynamic sense of space.

Theories of Imagination (TOFI)

Extrospection, 2022

Nationality

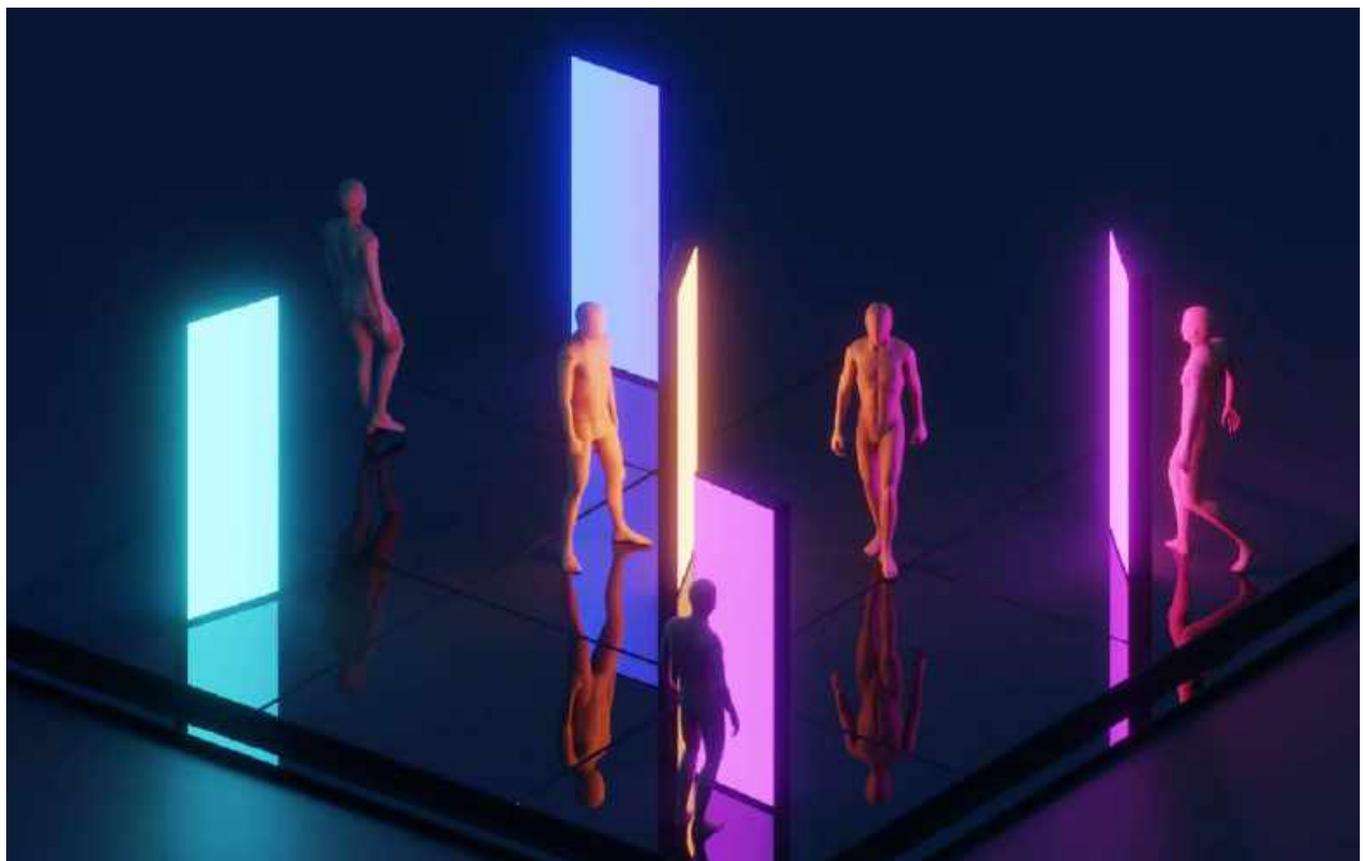
Bahrain

Artwork
Background

Theories of Imagination is a pair of artists who work as a collective, the artist and designer Abdulla Buhijji and artist and architect Noor Alwan. They create digital installations focused on identity and belonging, which encourages participation and reflection, questioning our place in the world and relationships to others.

Discussion points

The experience of entering this installation is completely different if you are on your own versus being with someone else. Do you think that is reflective of other experiences in life?



Render for *Extrospection, 2022*. Copyright and courtesy Tofi and the Royal Commission of Riyadh City, Riyadh

Philip K. Smith III

Flat Portal 4:1, 2022

Year of Birth 1972

Nationality US

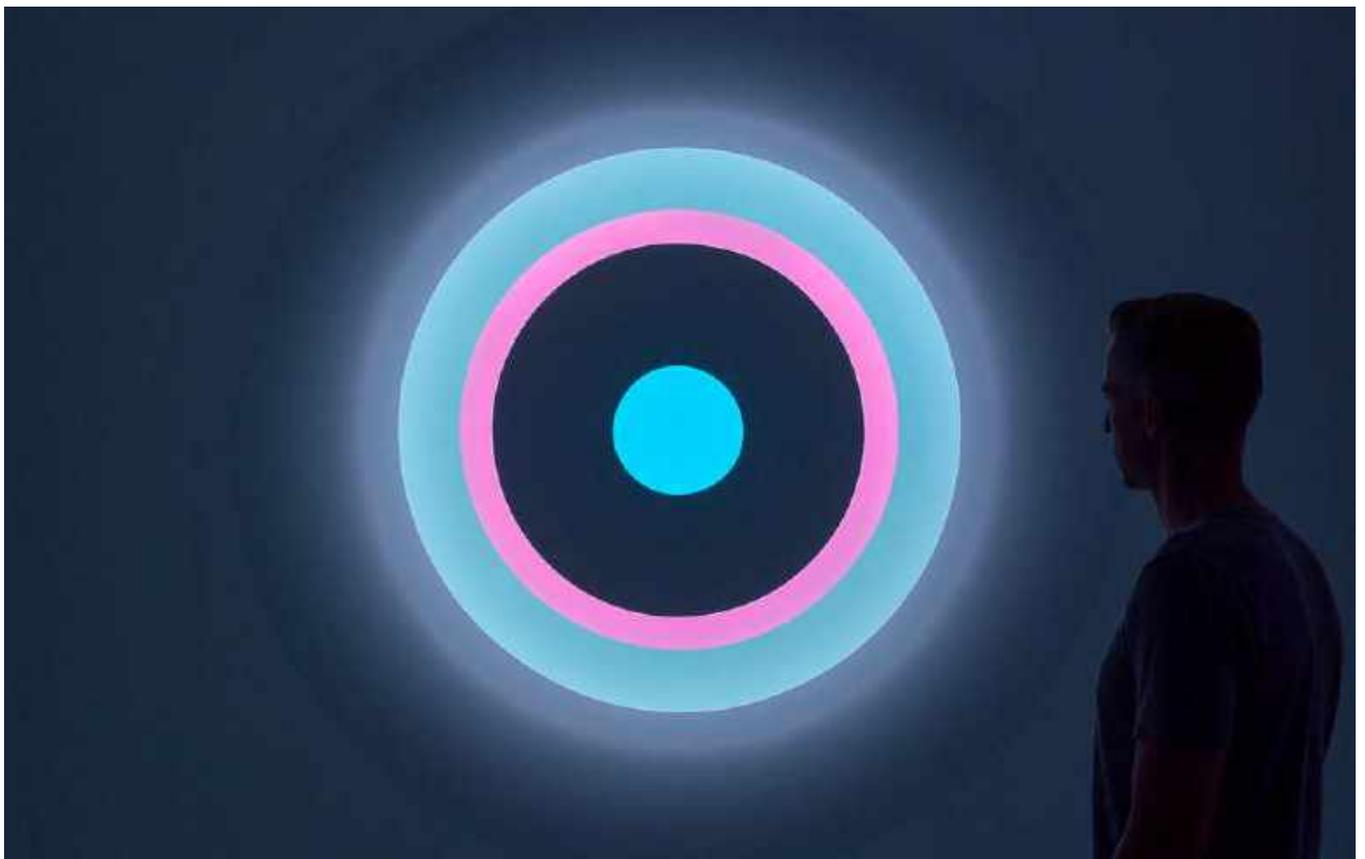
Artwork Background Portals are created by merging light, shadow and color across an undulating surface composed of seemingly hovering concentric rings of light. The metallic finish casts a different light across it, transforming opaque surfaces into ones that appear transparent and translucent.

A portal suggests an opening to somewhere else, used in architecture and computing, it leads to somewhere new, and often unknown.

Analysis How does the artist create the illusion of depth in his works?

Can we tell it is an illusion?

What can we learn about the ways light and color work together in this artwork?



Refik Anadol

Machine Dreams: Space, 2022

Year of Birth

1985

Artwork
Background

A media artist, director and pioneer in the field of artificial intelligence, Refik Anadol creates immersive spaces into which sequences of images and light are projected. This project relates to a collection of visual memories of the city of Riyadh.

Collective Project

If you were going to save one image, what would it be?

Encourage your students to take photographs of places they like to go in their city, and bring them into school to create a mass collage.

Are the images mainly of buildings or people?
Are they colorful?

Do they include nature or scenes from the environment?

Have they been taken inside or outside?

What examples of natural or artificial light are visible in the images?



Infinity Mirrors

Materials

Prepared frames
LED strips
Glass-covered with tint film
Plastic mirrors
Glue gun
Dust cloth
Scissors

Preparatory tasks for educator:

Prepare the materials and size for the number of students taking part in the activity.

Cover the glass with the tint film and ensure it is smooth with no air bubbles.

Leave to dry for 2 hours.

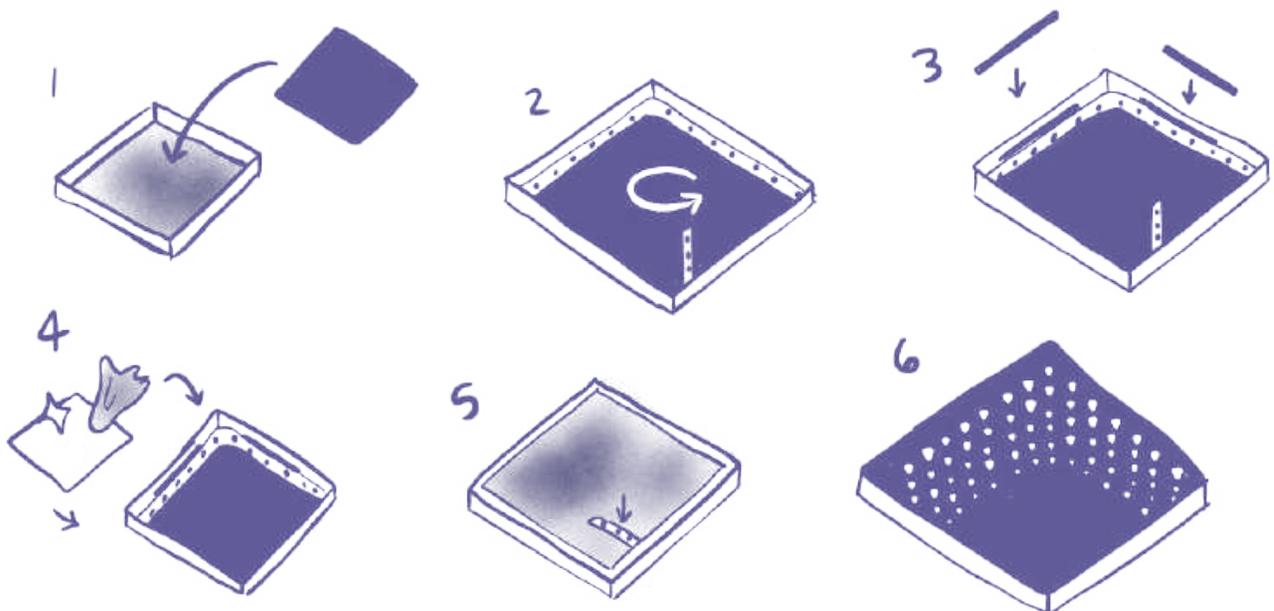
Cut-out wood sticks the same size as the edges of the frame.

In class, educator will demonstrate how to create an infinity mirror:

1. Open the frame and place the glass covered with the tint film inside.
2. Stick the LED light inside the edges of the frame and place an extra LED through the open tab.
3. Glue wood sticks to the edges of the frame, so there's a slight gap between the mirror and the light.
4. Polish the glass and mirror with the dust cloth. Fit the mirror to the back of the frame and secure.
5. Wrap the extra LED to the back of the frame.
6. Turn the lights on and explore the illusions it creates.

Discussion Points

- How do the lights appear?
- Do they cause any illusions?
- How would you describe these infinity mirrors?



A simple entry activity into teaching Machine Learning, Robotics and AI

Materials

Paper
Pencil
Subscription to Dall-E
(teacher)
Teachers computer/
projector/phone

Give an Introduction to Dall-E, a machine learning model developed by OpenAI to generate digital images from natural language descriptions.

Method

1. Divide students into groups of 3-4.
2. In groups, students brainstorm descriptions/sentences inspired by the artworks found in Spark to Spirit or explored in this pack.
3. Students share their descriptions with the classroom.
4. Whilst the rest of the class hears the description, they draw a basic sketch of each other's ideas.
5. After all students have had a turn, the teacher will then generate the shared descriptions in Dall-E.
6. Students discuss the outcomes/differences/expectations and human mind vs machine/AI.

Glossary: Theme 5

Concentric	circles or rings which have the same center and sit within one another.
Extrospection	an observation of what is outside oneself.
Machine Learning	a form of Artificial Intelligence that makes predictions from data. Artificial Intelligence, known as AI, is intelligence demonstrated by machines rather than natural intelligence which is demonstrated by animals, including humans.

Concluding Analysis



How essential is the human relationship to the earth when it comes to our ways of living and choice of materials when creating artworks?

How have technological discoveries impacted our day to day lives and how we can create artworks?

Which materials do you most enjoy creating artworks with?

Additional printed materials related to *From Spark to Spirit* include a Learning Kit and Exhibition Catalog. More information about the public programming including artist-led workshops and talks can be found on the website of Noor Riyadh and on their social media channels.

We do encourage you to share images of the results of the activities that you create with your students!



Email to info@riyadhart.sa or
tag Noor Riyadh on social media:

Instagram: [@noorriyadhfestival](https://www.instagram.com/noorriyadhfestival)

Twitter: [@NoorRiyadhFest](https://twitter.com/NoorRiyadhFest)

Facebook: [@NoorRiyadhFestival](https://www.facebook.com/NoorRiyadhFestival)

