



Patterns in Nature

Discover around you!

Fractal Pattern Hunt

dublin  council



Consent information

Patterns in Nature is part of a larger research study undertaken by Noor Murteza, a PhD student at the Ohio State University. The objective of this study is to explore ways to educate on the topic of fractals in order to develop a fractal educational model.

By sharing your completed booklet, images, or recordings you are agreeing to be included in the research project and will be part of helping develop this educational model. It is our intention to not collect or associate identifying information, like name, address, nor email, with the data gathered.

If you submit such information, we will work to remove it from our research records. Keep in mind that by returning the booklet to DAC you are choosing to have your data included in the study. There are no risks or discomforts expected beyond those that are routinely encountered day to day.

You are free to not return this booklet, and you will not be included in the study.

If you have any questions or want to know more about how your response to the activities are being used, please contact fractals@dublinarts.org OR Murteza.1@osu.edu

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Activity booklet etiquette

When visiting parks, be sure to practice the CDC’s recommended guidelines for disinfecting and physical distancing.

Fractal boxes, where the activity booklets are located, are works of public art installed in Dublin parks. Please respect the artworks as well as the flora and fauna in the park. Leave things as you found them.

This is an outdoor activity. As weather and terrain conditions may vary, it is the responsibility of the participant to conduct themselves with respect to safety and personal abilities. By utilizing the activity booklet, the participant accepts responsibility for their own actions, holding harmless Dublin Arts Council and the City of Dublin.

If you find the fractal boxes empty or damaged, please contact Dublin Arts Council at (614) 889-7444 or email fractals@dublinarts.org.

About this activity booklet

Dublin Arts Council presents *Patterns in Nature*—a series of interactive, booklets that guide visitors to discover patterns found in nature. Use this booklet to connect with nature, promote wellbeing, and create your own artistic creations!

Activity instructions

Patterns are everywhere! In this activity booklet you are asked to look around for patterns, document them, and then create your own unique pattern.

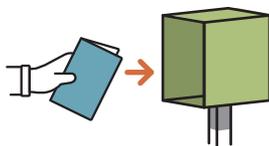


**30
MINUTES**

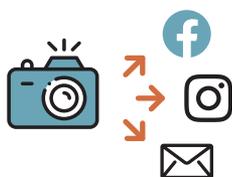
This activity will take about 30 minutes to complete.



To complete this activity, you will need a careful eye, a writing tool, and your imagination.



Complete this activity in the park you are visiting today. When you are finished, return your completed activity booklet to the fractal box.



OPTIONAL: *Patterns in Nature* photo contest!

Snap photos of the amazing fractal patterns you find along your journey and share your best discoveries with Dublin Arts Council on social media using the hashtag #PatternsInNature.

FACEBOOK: @DublinArtsCouncil

INSTAGRAM: @dublinarts

EMAIL: fractals@dublinarts.org

#PatternsInNature

Part 1

Instructions

Fill the boxes on the following pages with patterns that you find in the environment around you.

Pay special attention to the way the patterns are formed. How do the lines grow as the patterns grow? What shapes do the patterns make? How do the colors change? Try to copy the patterns you see as carefully as possible on the following pages. Label each drawing with the location where you found the pattern.



LOOK UP HIGH!

at the sky, in the clouds, in the branches of the trees.

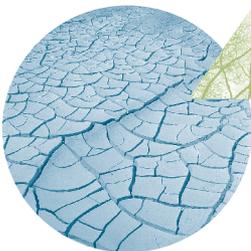
LOOK AROUND!

at the clothes people are wearing, the plants and leaves



LOOK DOWN!

at the paving stones, the small plants on the ground, in the roots of trees and ripples in the water.



Hints to help you get started



IMAGINE...

...YOU ARE 20 FEET TALL.

That is the height of a two-story house!

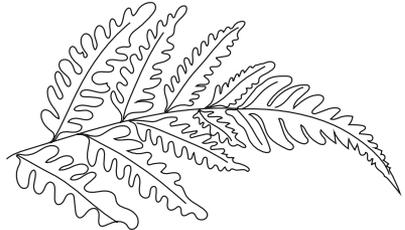
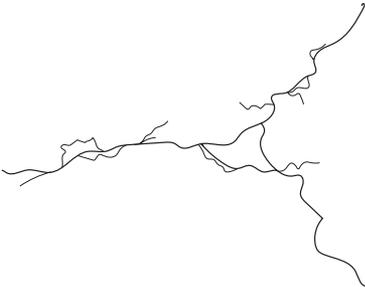
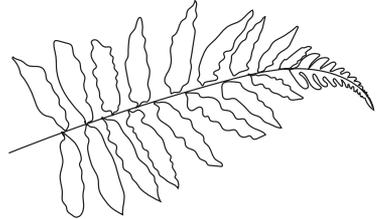
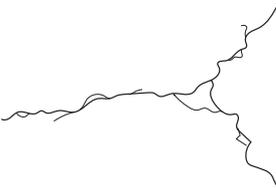
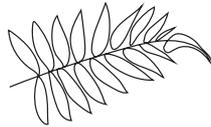
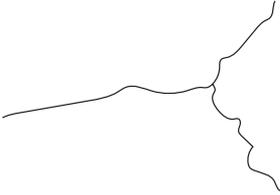
...YOU ARE 5 FEET TALL.

That is the height of an average adult.



...YOU ARE 2 INCHES TALL.

That is the length of an adult's whole thumb.



Notice that the type of pattern is different, depending on your perspective.

The patterns you might notice are not the same as those observed by your taller or shorter friends or family members.

Draw a pattern here ↴



Questions



Why did you choose to draw this pattern?

Which hint or hints helped you find the pattern?

Where in the park did you notice the pattern?

Draw a pattern here ↴



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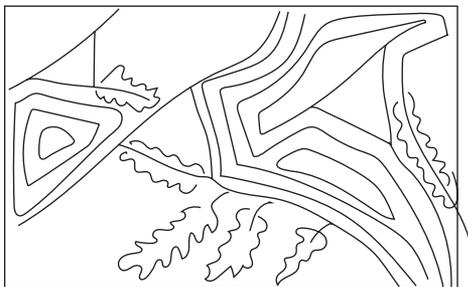
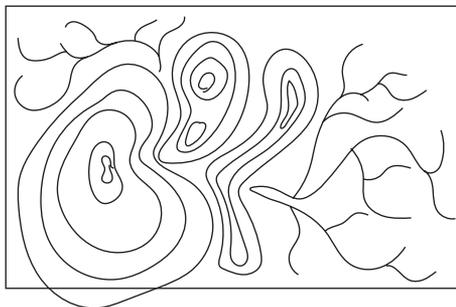
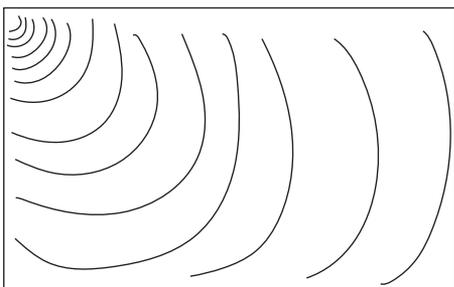
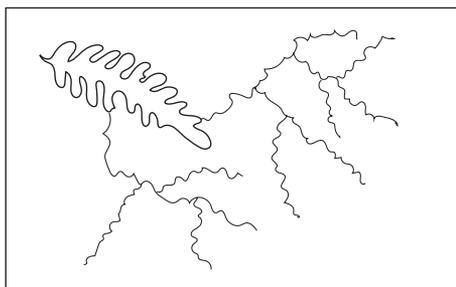
Part 2

Instructions

Now it's time to create an original pattern!

Look over the patterns that you noticed in nature, how can they be joined together? Draw random combinations of the patterns from Part 1 of this exercise on the following pages. There are so many ways that patterns can be joined. See the images below for some ideas on how patterns can be combined.

Sketch and draw different ways you imagine the patterns on the following pages. While trying out these pattern combinations, keep in mind your goal of creating an original pattern.





Pattern Combination 1



Pattern Combination 2



Pattern Combination 3



Pattern Combination 4



Pattern Combination 5



Pattern Combination 6

Part 3

Instructions



Draw a unique pattern below.

Look back at the patterns you saw in the park (Part 1 of the activity) and at the patterns you joined together (Part 2 of the activity)!

What would you name this unique and new pattern?



Share Your Experience

What do you think of this activity?



1. I am _____ years old.
2. I completed this booklet when I was in _____ Park in Dublin.
3. I completed this activity on _____ / _____ / _____ .
(month) (day) (year)
4. I enjoyed _____ about this activity.
5. I did not enjoy _____ about this activity.
6. I would do this activity again: Yes No
7. Is there anything else you would like to share about this activity?

We need your help. Tell us more!

Information you tell us about your experience helps Dublin Arts Council continue this project. Tell us more through the following options.

Use your
smartphone
to scan the
QR codes



Leave a
voicemail

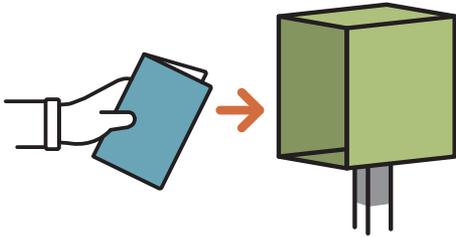
OR



Take a short
survey

Return Your Booklet

Success! You completed the activity.



Please remember to return your completed activity booklet to the fractal box when you're finished.

About *Patterns in Nature*

Patterns surround us in nature through every season. They help us understand how things work on our planet.

Have you ever looked at a fern and wondered how the branching of the leaves is so exact, or investigated a pine cone and asked why the scales are nestled in a perfect spiral? Though these patterns look visually complex, they use a simple mathematical rule known as fractals to help arrange themselves. A fractal is a never-ending pattern that repeats at different scales making smaller or larger copies over and over again.

The *Patterns in Nature* project offers participants an opportunity to explore the ways nature organizes itself. Take a journey to visit Dublin's parks to discover three new public art vessels, or fractal boxes, inspired by patterns found in nature. Each box contains free activity booklets, which change seasonally, offering visitors fun, fractal art activities that inspire connection to nature, promote wellbeing and nurture creativity.

This project is part of Dublin Art Council's Art & Wellness Initiative, which deeply explores how art can nurture personal and community well-being.

To learn more about *Patterns in Nature*, and for a map to all of the fractal box locations, please visit dublinarts.org/fractals.

About the Artists

For this project, Dublin Arts Council collaborated with four Ohio-based artists—three visual artists to create three unique fractal boxes, and a designer to craft the series of fractal activity booklets.

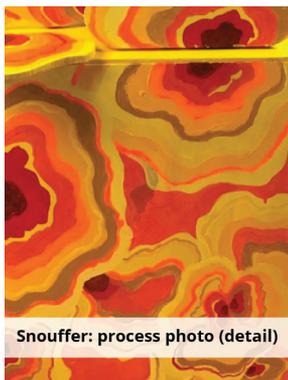
Activity booklet designer



Noor Murteza

Murteza is a doctoral student in the Arts Administration, Education, and Policy Department at The Ohio State University (OSU). She received her Bachelor's degree in Interior Design and her MFA in Design Research and Development. During her MFA at OSU, she explored the intersections of design, nature, and psychological wellbeing. Noor is interested in Design Education and is currently serving as a Graduate Teaching Assistant at OSU.

Fractal box artists



Karen Snouffer

M.L. Red Trabue Nature Reserve Fractal Box
6835 Avery-Muirfield Drive
Dublin, Ohio 43017

"This fractal box references a species of fungi native to Ohio, the turkey tail fungi, *Trametes Versicolor*. The fungi grow on dead matter like shaded, fallen trees. This stunning fungus is an example of fractals in nature, as it reveals a pattern that repeats and increases in scale as it grows.

"Its undulating forms and complex colors inspired my design with motifs and colors I use repeatedly in my work. The forms project from the box and are also painted on the flat surfaces, echoing other life forms: flowers, treetops, even clouds, all which also reflect fractals in nature."

Fractal box artists, continued:

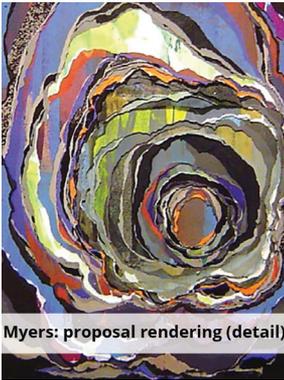


Jonah Jacobs

Kiwanis Riverway Park Fractal Box
6245 Riverside Drive
Dublin, Ohio 43017

“The main emphasis of my artwork is to recreate the grandeur and complexity of natural structures. My work recreates the structures found in nature by distilling their essence down to an abstracted form and then creating sculptures similar to those forms.

“This fractal box demonstrates how the replication of simple shapes and colors creates a complex and ornate organic-looking sculpture. Whether it’s the graceful limbs of trees, the intricate structures of mushrooms or the decaying remains of a tree trunk, the structures found in nature amaze, teach and inspire us to find solutions to a host of complex problems.”



Andrea Myers

Llewellyn Farms Park Fractal Box
“Echoes and Hollows”
4850 Tuttle Rd
Dublin, OH 43016

“The fractals that inspired my piece for Llewellyn Farms Park are interpretations of a wide range of inspirations from nature —such as ripples in water, hollows in trees, cellular structures, topographic undulations, or something else imagined.

“Materiality and sustainability are important in my work as the forms I created are comprised of recycled PVC billboard material. Cut and layered from a 10x30’ billboard, the imagery and text from the billboard become obscured and pixelated color arises in the surface. The use of billboard material relates to the functionality of the library box as both are vessels for the dissemination of information.”

Community Thank You

Patterns in Nature is made possible through Dublin Arts Council's collaboration with City of Dublin's Parks & Recreation Department, The Ohio State University's Department of Arts Administration, Education and Policy; and Department of Design.

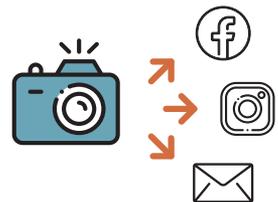
This project is a component of a multi-year Art & Wellness initiative, realized with support from the City of Dublin, Ohio Arts Council and The National Endowment for the Arts. Dublin Arts Council would like to thank the community partners who continue to support this initiative, which include Washington Township EMS, Syntero Counseling Centers, Dublin City Schools, Dublin Chamber of Commerce, OhioDance, Japan-America Society of Central Ohio, Dublin Bridges, Visit Dublin Ohio, Cardinal Health and several City of Dublin departments, including Police, Human Resources, Recreation Services and Parks and Recreation. A special thanks to the Fractal Foundation for their plentiful educational resources.



Join the *Patterns in Nature* photo contest!

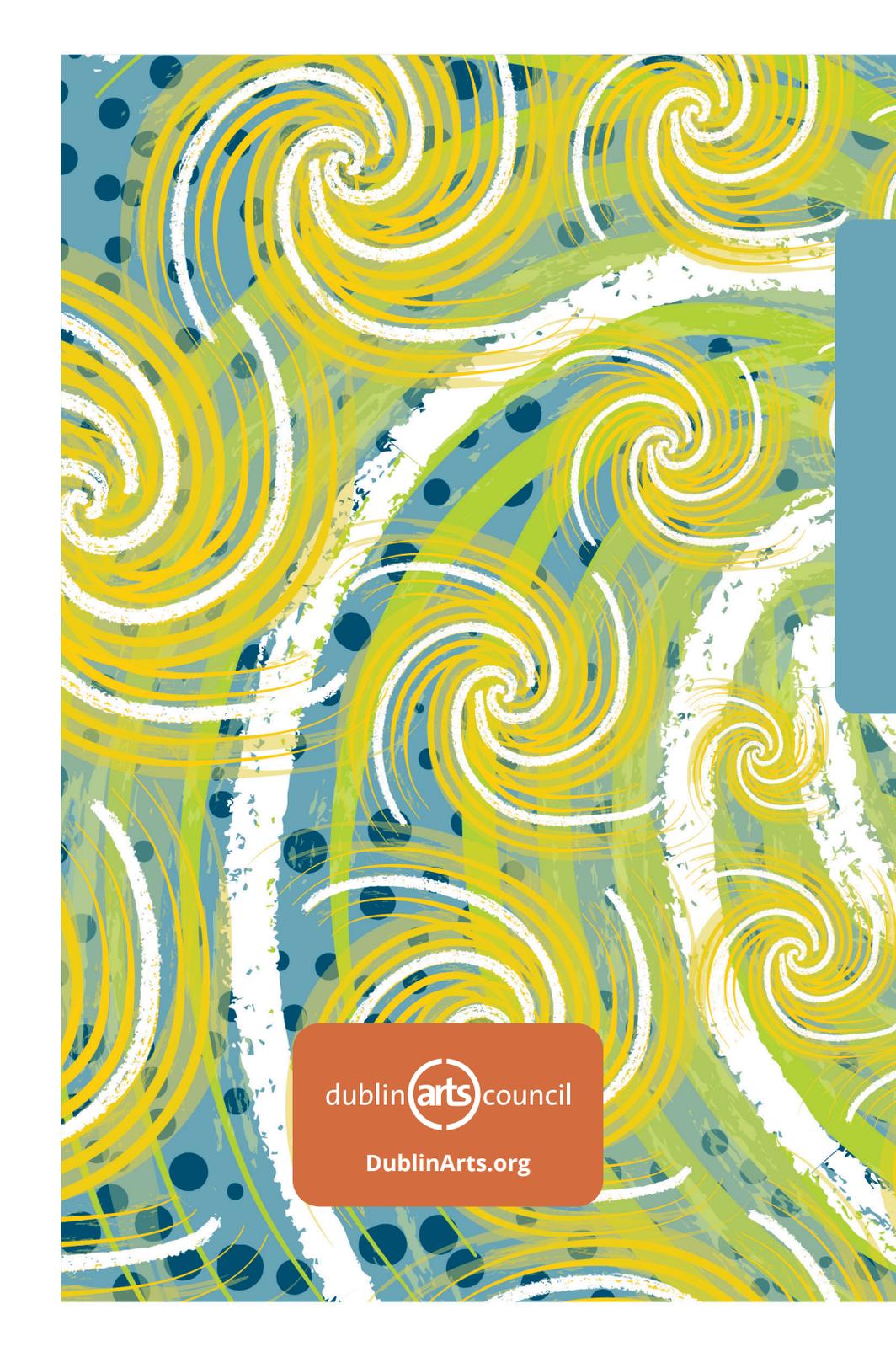
Dublin Arts Council wants to show off the awe-inspiring patterns you find along your journey. Share your fractal nature photos by sending us an email or by tagging us on social media.

FACEBOOK: @DublinArtsCouncil
INSTAGRAM: @dublinarts
EMAIL: fractals@dublinarts.org



#PatternsInNature

Dublin Arts Council will present these community photos during a special *Patterns in Nature* gallery exhibition, on view at Dublin Arts Council in Spring 2023. Details will be posted on our website, **DublinArts.org**.



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DublinArts.org