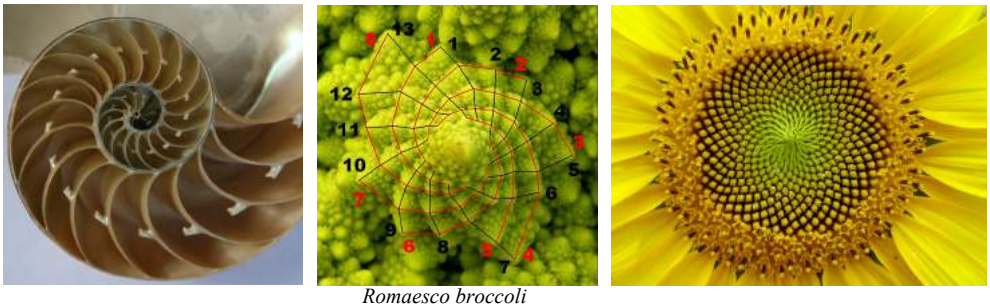
Work Sheet 1
How to Create Patterns for Paper or Fabric

Want to create your very own patterns that could adorn your facemask, tote bag, notebooks, journal... the list is endless. Following on from this, in the subsequent worksheets we look at doing 1.) a linocut/block printing exercise using your very own pattern, 2.) a more intricate hand drafted pattern, 3.) sew your own facemasks using your very own patterned fabric.

But first let is try and understand the evolution of pattern

Patterns surround us in every aspect of our lives, from nature to our general environment. There are visible and then non-visible patterns like sequences, time, days months, seasons etc.



Romaesco broccoli

The book, Science Behind Nature's Patterns, explores the reasons behind the incredible visual structures in the living and non-living world written by zoologist D'Arcy Wentworth Thompson.

Here is an excerpt from an interview he did in 2016 for the Smithsonian Magazine:

> *"Traditionally, we think of patterns as something that just repeats again and again throughout space in an identical way, sort of like a wallpaper pattern. But many patterns that we see in nature aren't quite like that…We sense that there is something regular or at least not random about them, but that doesn't mean that all the elements are identical. I think a very familiar example of that would be the zebra's stripes. Everyone can recognize that as a pattern, but no stripe is like any other stripe…*
> *How does nature without any kind of blueprint or design put together patterns like this? When we make patterns, it is because we planned it that way, putting the elements into place. In nature, there is no planner, but somehow natural forces conspire to bring about something that looks quite beautiful."* (Fessenden, 2016)

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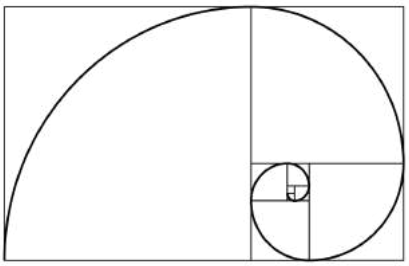

The Fibonacci sequence otherwise known as the Golden Ratio is a very famous mathematical sequence which explains the natural evolution of pattern since time began, from seashells to spiralling galaxies, from the head of a sunflower, to a fern leaf, or the pattern of a romanesco broccoli.

So the patterns that we observe in nature come in multiplicity of forms and shapes, including symmetries, trees, spirals, waves, foams, tessellations (a pattern of shapes that fit perfectly together), cracks and stripes, including our thumb print. (McNally, 2010)

But patterns are all around us even in the manmade world, like the cracks in pavements, the symmetry of houses and the grid of cities, underground systems etc. Basically patterns are everywhere we look, but that is not to say we still cannot create more of our own!

(Drone photo of Athens credited to (@spathumpa, 2020)/ (Overview, 2020))

Here is a drone photo of the capital of Greece, Athens. This shot captures the grid plan of the Gyzi area.

Author of '*Pattern Design'* Elizabeth Wilhide talks about the deep and rich history of pattern and the countless permutations of motifs, colour-ways and even scale and what they all have in common a "regularity of repetition, an insistent rhythm that animates a flat surface with a sense of movement and vitality and gives it depth. It can be seen in the arrangement of petals on a flower head, the branching growth of stems and vines, the spirals of a seashell pattern is inherent in the natural world that surrounds us. Powerful and transformative, pattern has an irrepressible joie de vivre". (Wilhide, 2018)

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Designers

Let us take a look at some pattern designers such as the renowned Irish designer 'Orla Kiely". She describes pattern as being akin to a "universal language" and believes that pattern 'can make you happy without you even noticing. (Kiely, 2018) Her book "A life in Pattern which coincided with the exhibition of the same name in the Victoria and Albert museum in London, 2018, is an archive of Kiely's work, which recognises her successful use of simple shape and colour. Products using her designs include ready-to-wear collections, handbags, jewellery, home-wear, stationary, shoes, wallpapers and much more. Here is her iconic 'stem' pattern from 2003.

(Orla Kiely's Multi Stem Pattern © Orla Kiely)

Another highly esteemed pattern designer is Lucienne Day, she was one of Britain's most pioneering and prolific textile designers in the mid twentieth century. Her patterns are iconic with mid-century print design and are still very popular today. Day's creations were used for carpets, wallpapers, dress fabrics, china tableware etc. The Lucienne Day: Living Designs retrospective exhibition was held here in "The Coach House" at Dublin Castle in 2018.

(Her famous Calyx print 1951 ©Robin & Lucienne Foundation) (Emma Hunt, 2018)

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Let us see how we can learn to create our own pattern

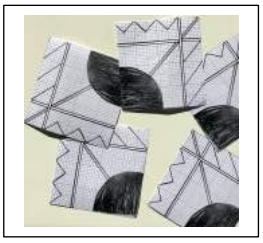
How to begin your pattern design:

Materials:

Plain white paper
Tracing paper or greaseproof paper
Pencil
Ruler
Grid/graph paper
Scissors/craft blade
Cutting board or thick cardboard
(If using cardboard be sure you don't use too much pressure and cut through the cardboard onto your table)

Method:

1. Stick a sheet of tracing paper over some graph or gridded paper
2. Draw a square anywhere between 2 x 2 and 8 x 8 cms, depending on how big you want your pattern to be, but maybe start small first while you figure out the process
3. Start with simple shapes to achieve a pattern, and take it from me, the simpler it is the more effective it can be sometimes! Draw full/half circles, straight or zig-zag lines, triangles, squares etc. See image 1 below.
4. Block in colour in some of the shapes if you like, using black & white in the beginning as it can be less confusing but once you get comfortable with the concept you can introduce different colours to enrich the pattern even more. (Look up Josef Albers Interaction of Color!)
5. Transfer your pattern to a plain white sheet of paper
6. Then either repeat doing this by hand or photocopy multiple times
7. Now cut out your squares using a scissors or a cutting blade on a cutting board
8. Then it is time for the fun! Start playing with the patterns and applying it to your surface of choice, sticking to your homework journal, diary etc!
9. This would work really well in collage form using origami paper or appliquéing scraps of a fabric to a larger piece of fabric. See images below 2 & 3.



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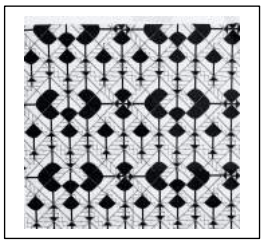

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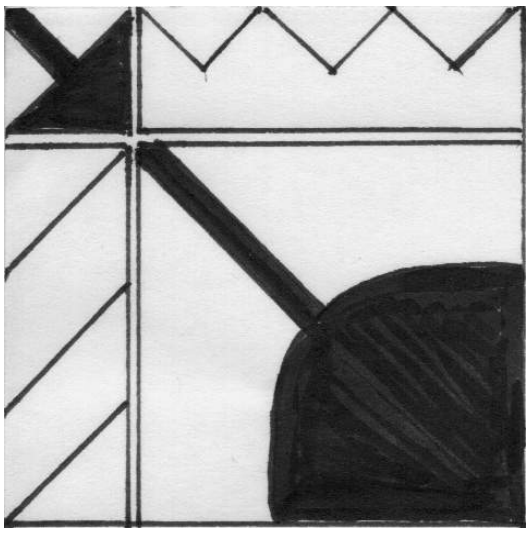


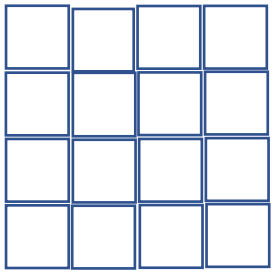
For my pattern I have used Dublin Castles *'Upper Castle Yard'* as my source for inspiration:

The half circle represents the clock in the Clock Tower, the long straight diagonal line coming out of the circle is the hand of the clock. The arrow in the top left corner is the tip of the clocks hand but I have it facing inwards referencing how we at the Castle look back in time at the history and the stories that surround Dublin Castle. The other lines/diagonals are representative of the pattern in the brick work of the courtyard and the surrounding buildings.

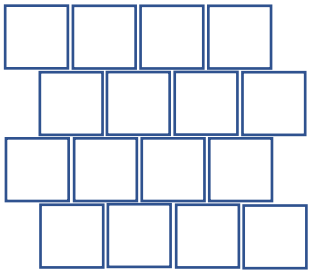
Now, how to layout your pattern!

There are a number of types of pattern repeat styles and ways of laying out a pattern. There is the Block, Brick & Half Brick, Drop, Diamond, Toss & Random, Stripe, Dot, Plaids, Ogee (a long diamond shape), to name but a few. We will look at the block, brick and diamond today.

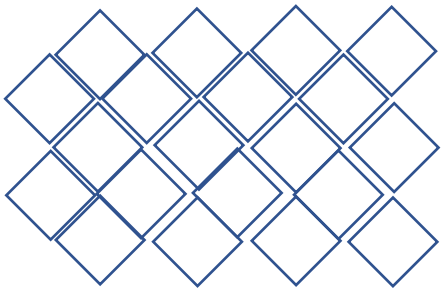
1 THE BLOCK REPEAT PATTERN



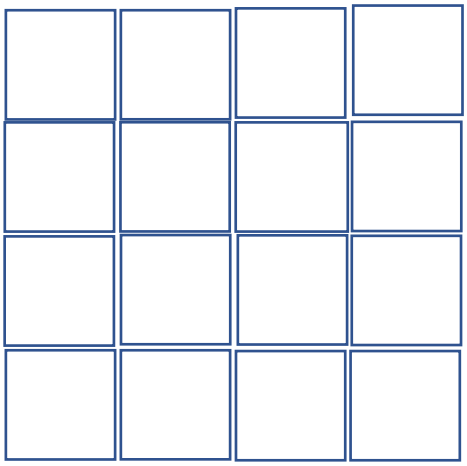
2. The Brick repeat pattern

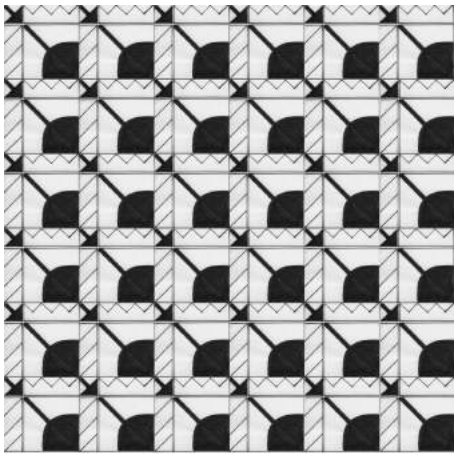


3. And the Diamond repeat pattern

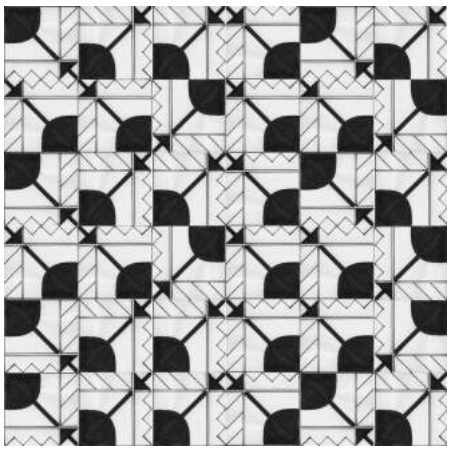


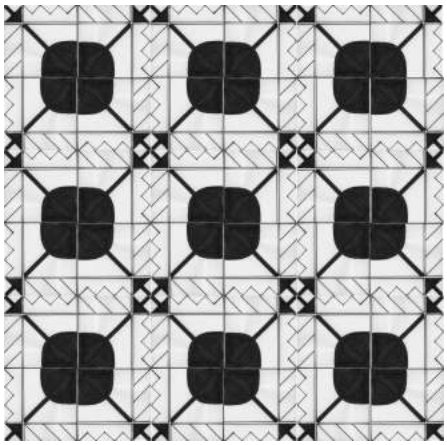
Here are examples using pattern layout No. 1: The Block repeat pattern





This is the most basic pattern but it can be transformed by turning the tiles in many directions:





And as you can see above how by changing the direction of some of the tiles you get an interesting variation of the pattern.

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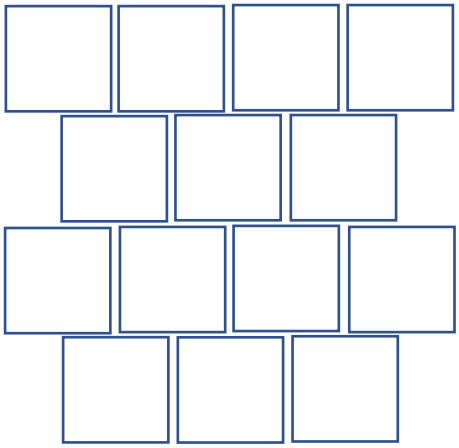
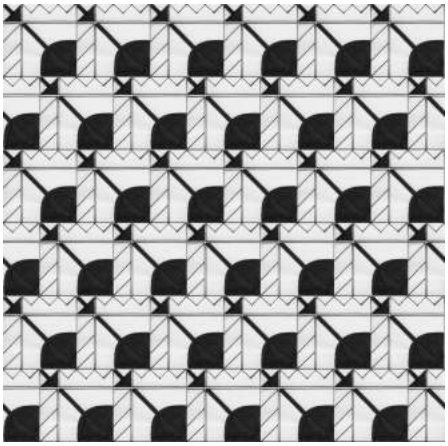
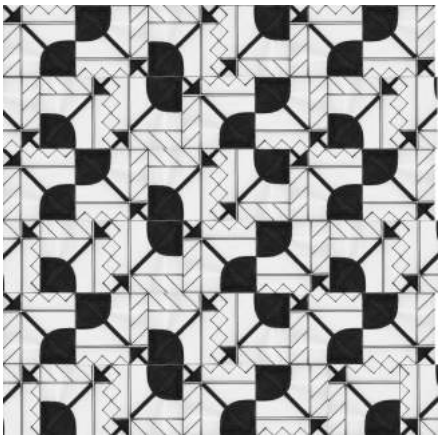
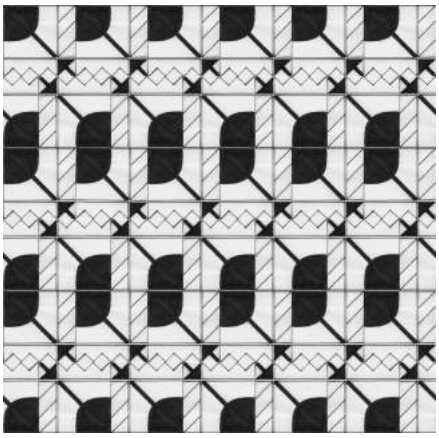
Now let us look at pattern layout # 2 The Brick repeat pattern:





And here again by turning and twisting the tiles in different directions you get a completely different version of the Brick repeat pattern. This is what makes it so exciting, taking a very simple patterned tile and seeing the countless permutations evolving!





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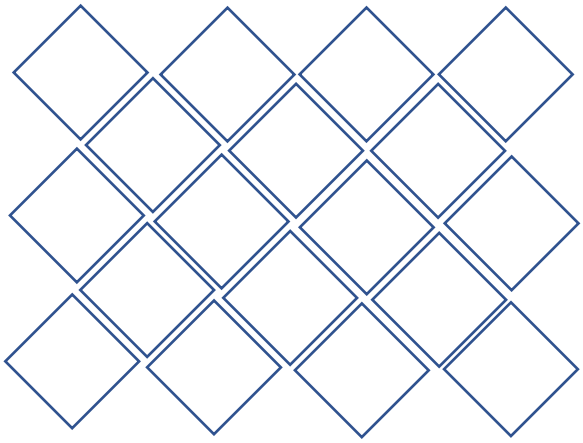
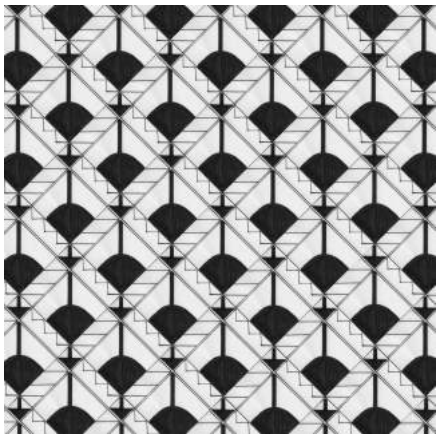
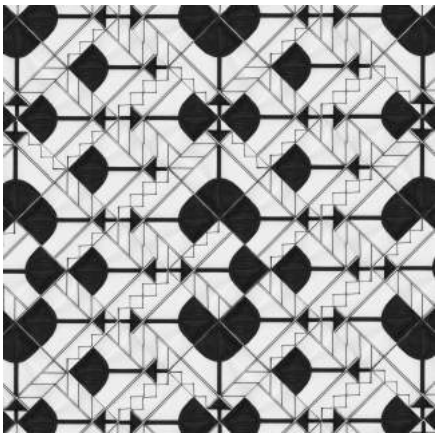
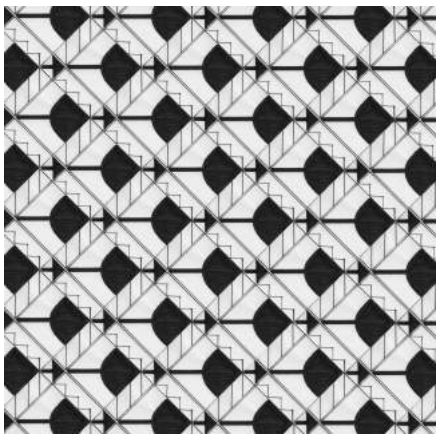
And now for the last pattern layout # 2 The Diamond repeat pattern:





And here again by turning and twisting the tiles in myriad of directions you get a completely different variation of the Diamond pattern:





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Here is an example of a simple appliquéd/embroidered collage using some scraps of fabric.

Lookout for the next worksheets to follow!

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Resources:

I believe this worksheet could be used as inspiration in conjunction with the Junior and leaving Certificate Home Economics syllabus:
(Education, Department of, 2019) (Education, Department of, 2019)

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