Photomath2020

Escuela Europea
de Alicante

SCHOLA EUROPAEA

218 piezas

218 piezas

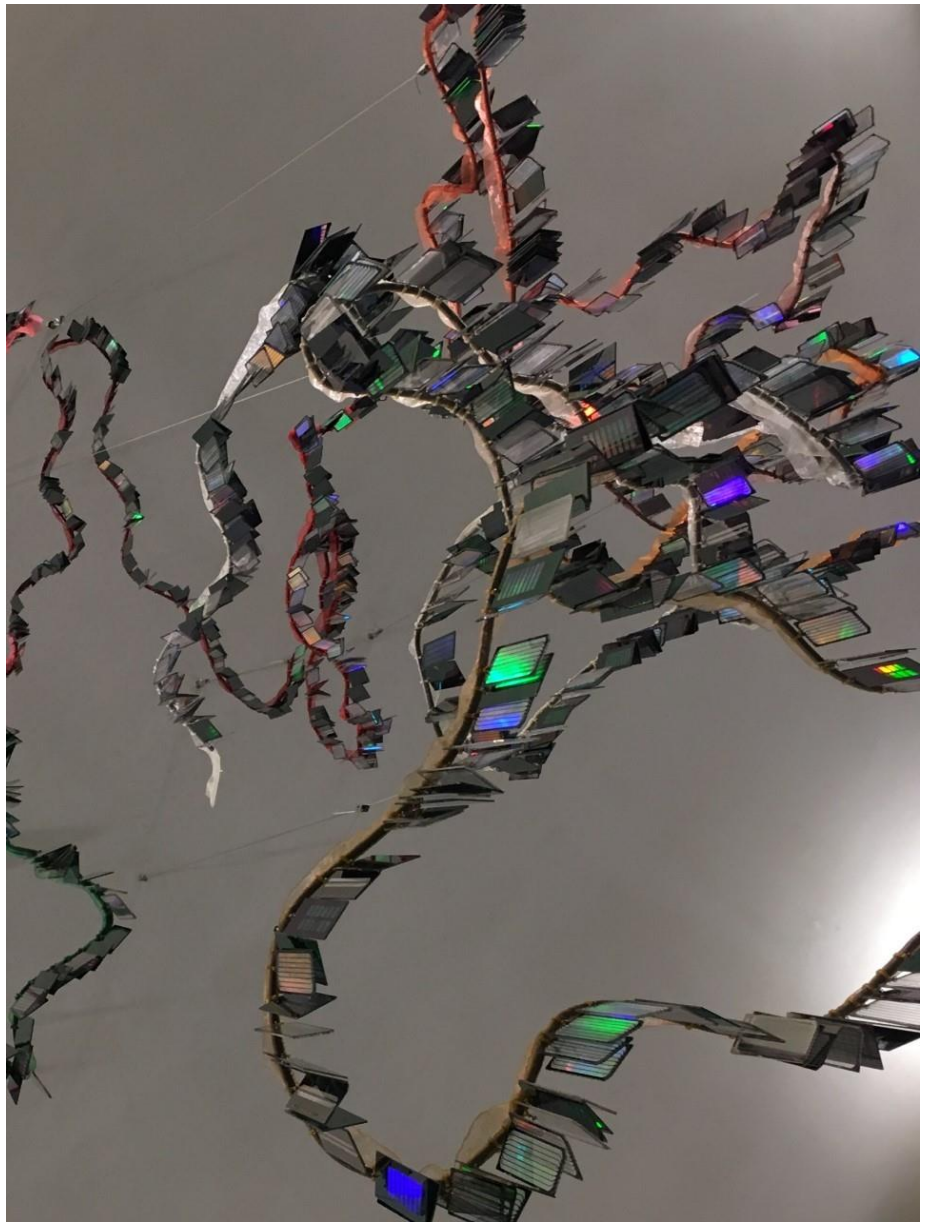
218 piezas: Esta es una de las 1.95×10^160 combinaciones del cubo de Rubik 7x7x7 igual de probable y valiosa que la del estado resuelto. En este patrón vemos como los centros del cubo han sido rotados varias veces.

Click to add text

A HEARTBREAKING CONTINUOUSNESS

A heartbreaking continuousness

This photograph, taken at Auschwitz, display a never-ending corridor with pictures and information about the victims of the Holocaust. There are multiple guiding lines including the space between each row of photos. Perfect parallels can be observed whether it be between the two pieces of wall surrounding the photos, the rows of photos, or even between the rows and the wall. Moreover, the black and white light reflected on the wall creates perpendicular traits.



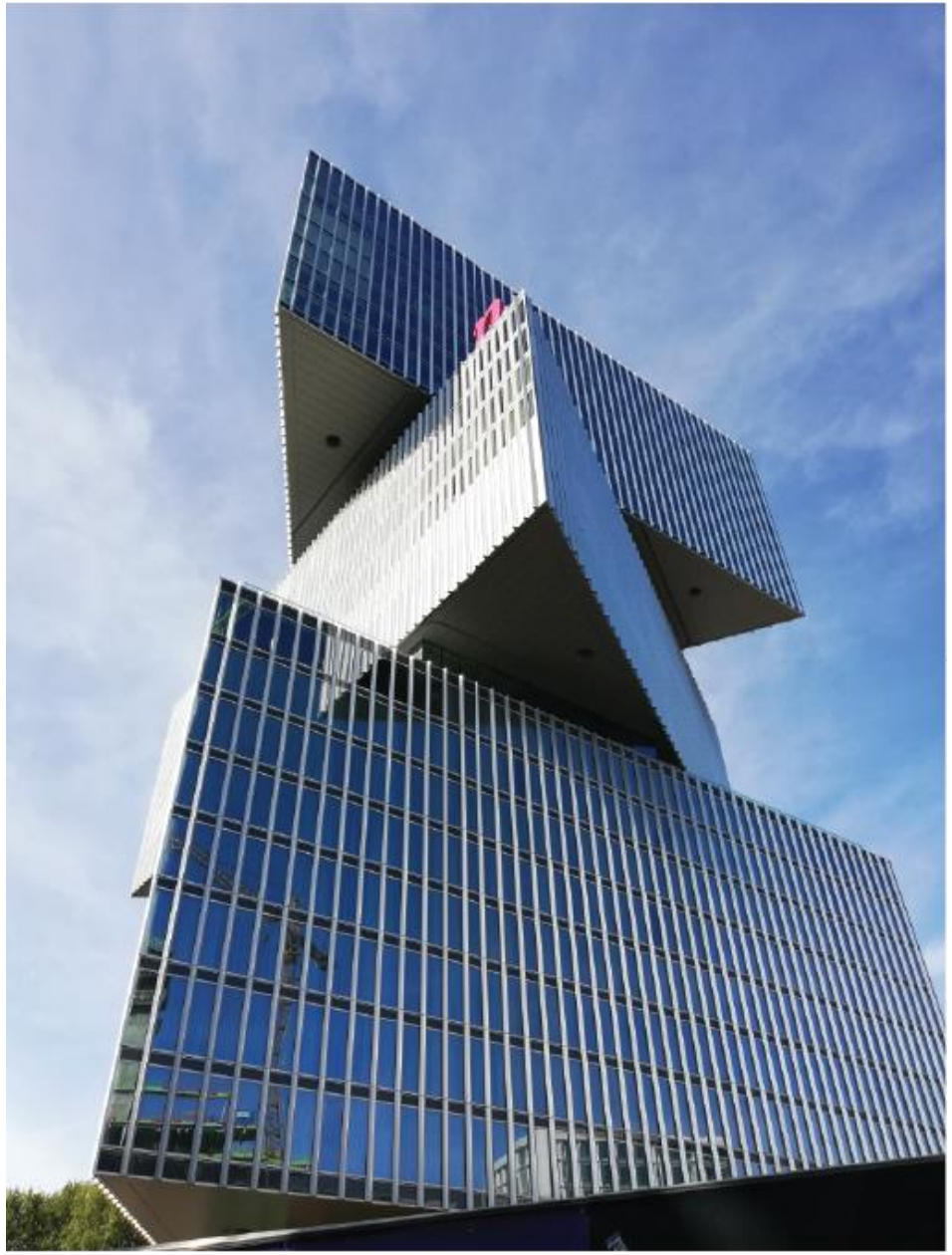
A REFLECTIVE STREAM

A Reflective Stream

This beautiful abstract form is composed of a thick steel string holding a multitude of mirrors. The steel string gives the impression of a ceaseless line of little rectangles. The small mirrors reflect the light in a colorful way, this is due to the mathematical process of light refraction. In addition, the twirling of this line creates angle-less and non-quadrilateral forms that appear almost fluid.

Alfil

Alfil



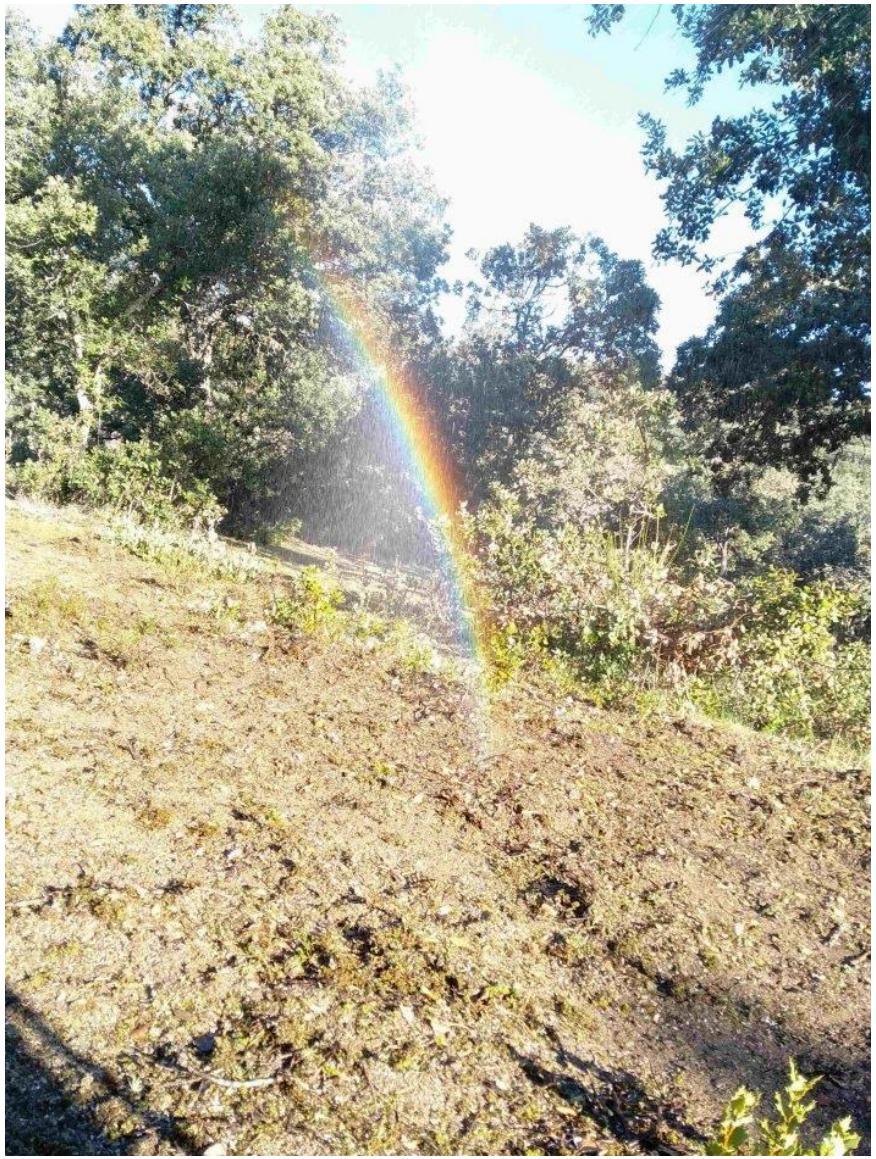
Amsterdam's wonder

Amsterdam’s wonder

I chose this photography of the hotel nHow located in Amsterdam Rai because it expresses two main shapes in different sizes and distances. They include different sized triangles and rectangles; the triangles represent the main structure of the building and the rectangles are the windows. The way I took this shot is simple, it was spontaneous. The lightning seemed optimal, I was standing in a favorable angle and being right under this building made it look massive, which gives a special effect that can be interesting. By taking a close look at the photography we can observer many more different forms like circles, shapes created by other buildings being reflected on the windows or even the reflection from the crane which adds little details.

Angle de pyramide

Angle de pyramide: Cette image représente une pyramide, mais on arive pas facilement à savoir d'où est prise la photo. On croit aussi voir des losanges tandis que ce sont des carrés de même taille.



Arco iris

Arco iris

Are you looking for me

Are you looking for me?

What you see here are lights photographed from below. One of the lights is colored differently, which is why I decided to call the photo: 'Are you looking for me?'. It suggests that one light, or person, stands out in a crowd, which is (almost) the same. It also has something mathematical in it, simply put; the circles which are the lamps. There are eight lamps. The number eight is a symbol of infinity and a constant flow of energy and power[1]. So, the final meaning is that life is a constant flow of energy (and power) and you as an individual (the different lamp) should find their own type of light in life. This light represents your individual ambition(s) which brings joy and happiness.

Asimetría en un prisma imaginario

Asimetría en un prisma imaginario:

Asimetría en un prisma imaginario: En fotografía siempre se intenta captar la simetría, proporciones, líneas de fuga. Cuando vi esta silla me llamó la atención la asimetría de una de sus aristas. Más aún cuando me explicaron su significado y lo que representaba: el símbolo de las mutilaciones provocadas por las minas anti-personas

Avión

Avión

Bengala

Bengala

“2”

“2”

Bright lights, bright minds

Bright lights, bright minds

I think mathematics can be found anywhere; it is ubiquitous. Yet, in order to see the hints, you need to have the eyes for it, and not everyone does. A pity, I think! The lamppost is a theoretical representation of the people who have the mind to recognize the hints, being the lights in a dark sky, or the special individuals in a sea of people who can't see the hints, making them bright minds. Nonetheless, the links to mathematics in my image aren't only theoretical. In the photo, taken during a walk in the park, hints to mathematics are all over. Its focal point, the lamppost, links to the geometrical side of mathematics. The three lightbulbs form a perfect, equilateral triangle, the point in which the pole connects them being the orthocentre of the triangle. Even the directions the light is oriented are a hint: they form two perfectly parallel lines. Are you a bright mind?

Carrément profond

Carrément profond

Carrément profond: Sur cette photo, on peut voir de gros blocs de pierre alignés créant la perspective d'un couloir. Si on regarde au sol, Le pavement est composé de petits carrés tous parallèles et perpendiculaires entre eux sans que la surface soit plane.

Checkmate

Checkmate

Chess is the mathematical game per se. Players face each other on an 8*8 grid, made up of 64 squares. It’s based on a system. A system only to be perfectly mastered by maths and logic geniuses. The above picture focuses on the corner of a chess board.

CIRCLES

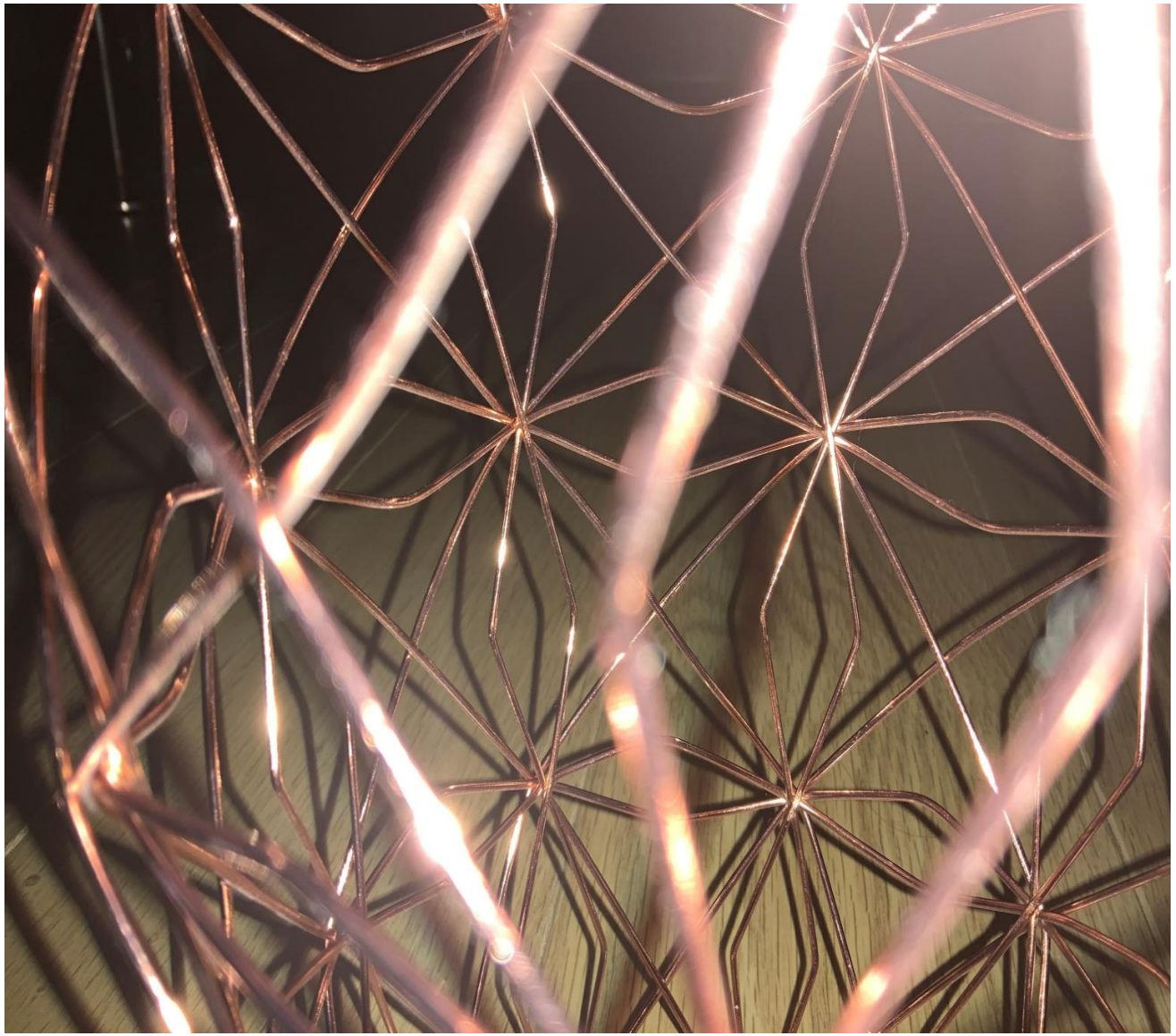
Circles

Even though the holes in the wall seem to get smaller in distance, they are the same size- as a result of having taken the picture from a certain angle. The line between the ground and the wall and the line on the asphalt that connects to it form right angles. Also, the ground and the wall are perpendicular.

Colonnes

Colonnes de béton

Le jeu de lignes entre les colonnes de béton, les dalles, la barrière et l'armature de la fenêtre donne une belle image. De plus, l'impression de profondeur et le reflet des lampes en forme de boule rajoute une touche surnaturelle au tout. L'effet de couleur permet de rendre le tout plus chaud, car tout ce béton rend l'atmosphère très froide et stérile, de plus la couleur fait ressortir les lumières jaunes qui se reflètent dans la fenêtre.



Defying Perfection

Defying Perfection

Maths is all around us. Not only in the usual numerical sense that comes to mind but also in geometrical patterns. If we look around, patterns are everywhere. They create a satisfaction in our mind. In fact the existence of most objects all around us is based purely on mathematical shapes whether it's triangles, squares or circles, everything is carefully calculated. My picture shows a geometrical pattern which when combined with light becomes unpredictable. The reflection of the light and the shadows are not predestined, they fall wherever the light comes from. The image shows the freedom of mathematics and how we can defy the perfection that is our man made, artificial world.

DESPAIR

Despair

This image is rich in geometrical shapes which puts in valor a side of the modern society we live in. There are only squares and rectangles present. The shadows play an important role as they put everything in the perspective of a sunny day. The left sides of the buildings are highlighted. Because of all the geometrical shapes in this image, it’s tricky image to stare at as you don’t know where you stand in relation to this building.

DIAMOND SHAPED SWIRL

Diamond Shaped Swirl

This photo was taken in the Neapolitan undergrounds. A diamond-shaped form that extends to the end of the stairs can be observed. This continual geometrical shape of a square with 4 equals angles gives a sense of deepness to the photo. It looks like a never-ending swirling wall.

El mundo en una cuadrícula

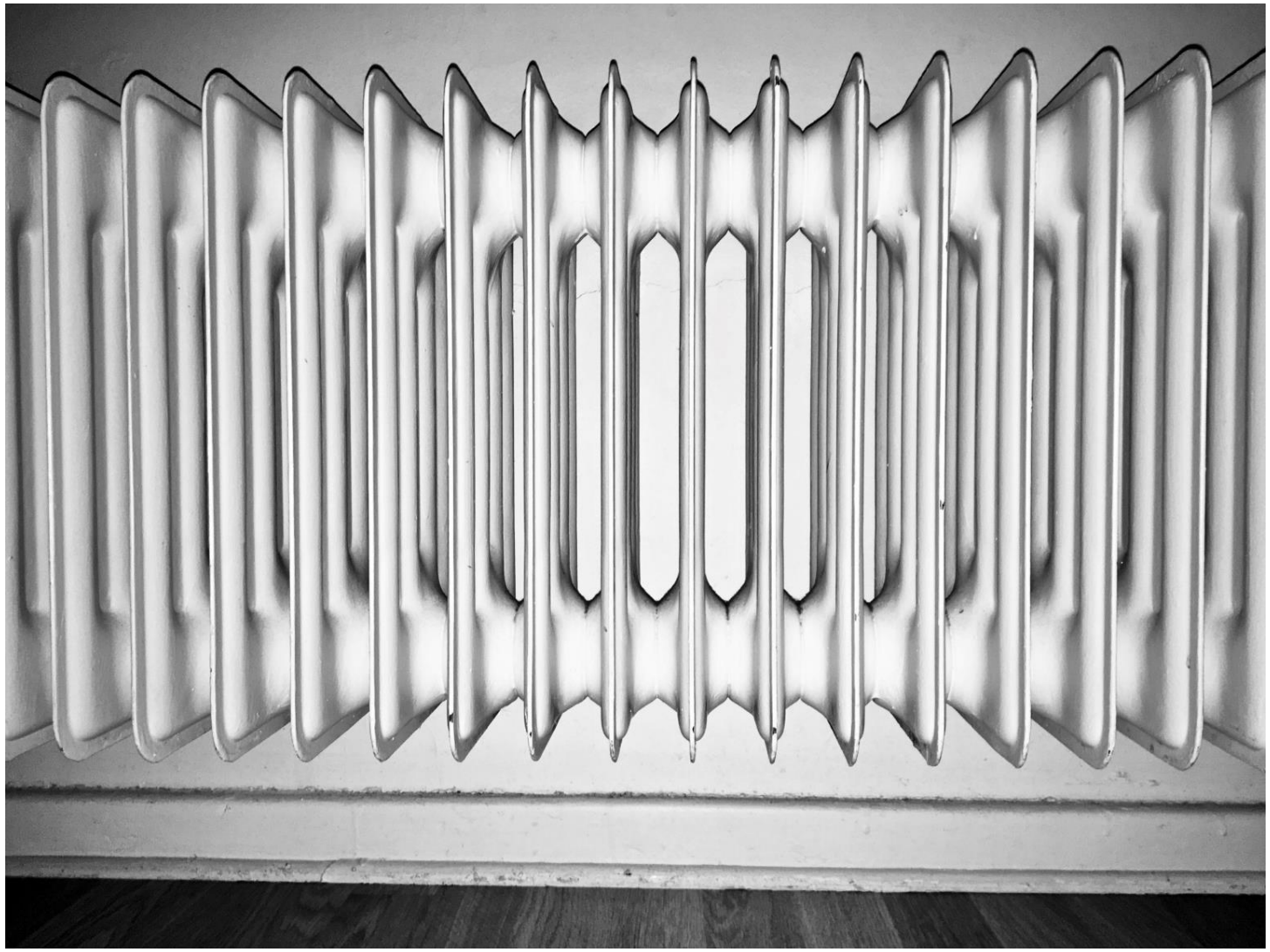
El mundo en una cuadrícula.

El mundo en una cuadrícula: Esta foto está tomada a través de un red cuadriculada. Con esta cuadrícula podemos analizar lo que nos rodea como si fuera una gráfica y un conjunto de funciones, por ejemplo, muchos de los edificios se pueden simplificar a un conjunto de rectas o las farolas como una recta y una parábola.

Elements

Elements

This picture shows the reflection of two basic elements interacting with each other. It is a drop of water on a mirror with a flame on top that is being reflected by the drop of water. This creates the illusion that the water is on fire. The mathematical part of this photograph is the reflection of the flame and how water refracts light.



EMOTION

Emotions

Symmetry in everyday language refers to a sense of harmonious and beautiful proportion and balance. In mathematics, "symmetry" has a more precise definition, and is usually used to refer to an object that is invariant under some transformations; including translation, reflection, rotation or scaling. This radiator is therefore a perfect example of symmetry as the transformations named can be made. In the inside of the radiator we notice the presence of hexagons which ‘fade’ away as you move away from the center of the image.

Erizos de mar

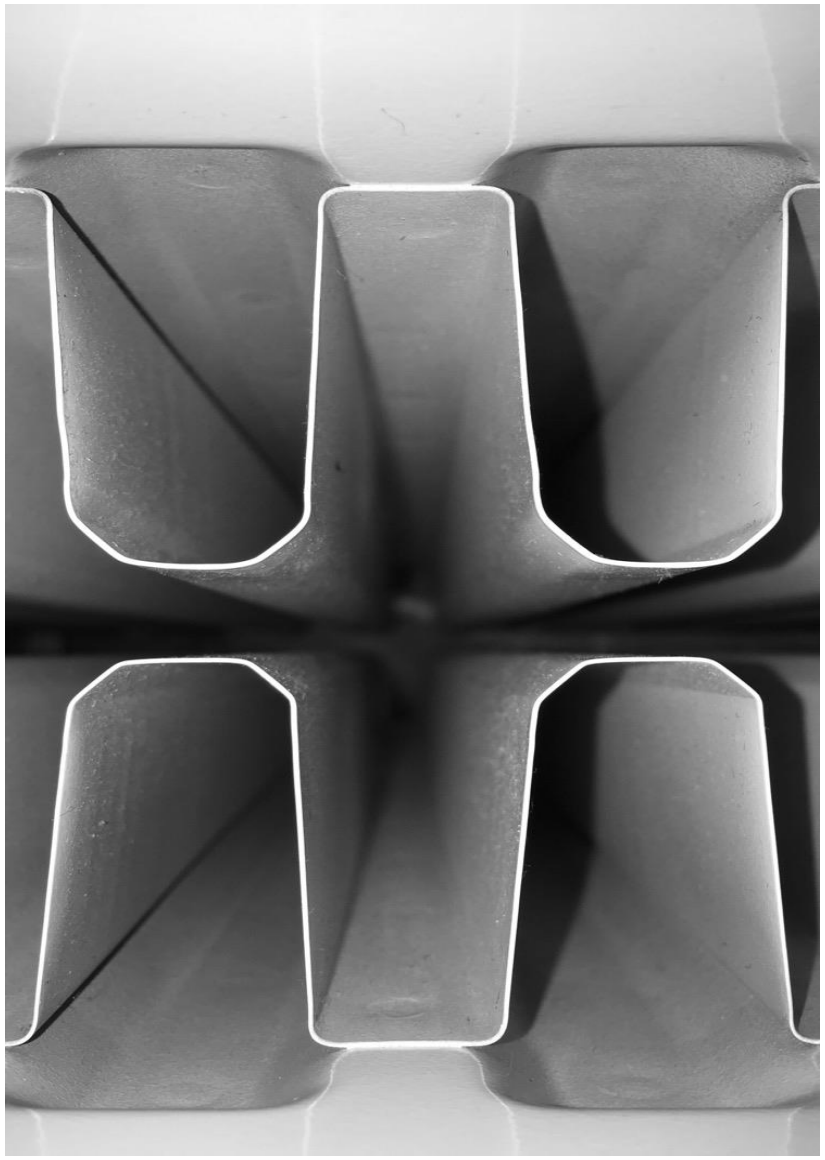
Erizos de mar

Erizos de mar: Estamos ante unos caparazones de erizos de mar recogidos en las playas de la Coveta Fumà en el Campello. Claramente se ve que siguen un modelo regular de simetría pentámera con cuerpo esférico.

Estrella abstracta

Estrella abstracta

Estrella abstracta: Es una foto superioir de una estufa encendida. Las llamas crean una figura geometrica abstracta.



Fall Into The Unknown

Fall Into The Unknown

This is an up-close photo of a radiator from above. Closely looking, the symmetrical lines and shapes that are perfectly centered create 4 square looking tunnels. The different shade of black and white creates different shadows and gives a sense of un-knowingness. You almost feel as though you are trapped in a maze!

F
oto1S

Foto1S

It represents the different angles in math and shows a geometrical side.

Foto2G

Foto2G

Cleary a parabolic function was the foundation for the architects to construct that building, and due to its shape, much light shines in the rooms, while the area the house is built on is used efficiently

Foto3G

Foto3G

The strawberry has the perfect shape of a circle, but with one quarter missing. This can the sin value of -1 or cos of zero

Foto4G

Foto4G

The light itself has great similarity to the Mandelbrot Zoom and the outer patterns are all constructed using parabolic equations

Foto5B

Foto5B

The Geometric Pattern that you see on the pie is a visual reppresentation of the tangentlines to a certain point on a circle in a 2D orthagonal plain. In theory there are infinite Tangent lines to the circle. This shows the beauty and visualization of math in daily life.

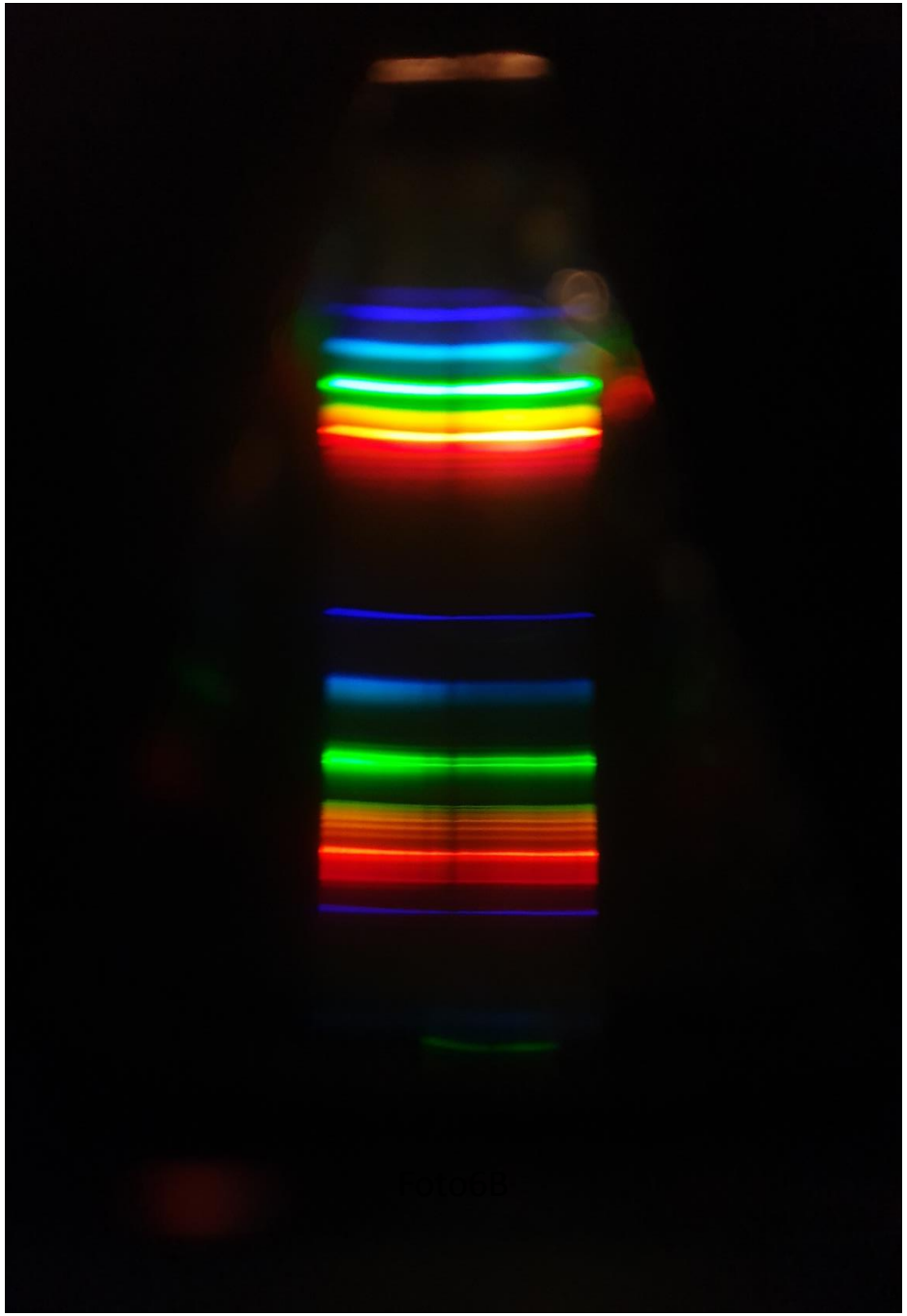


Foto6B

The Picture shows the different wavelenghts that comprise our natural daylight. By applying our knowledge of chemistry, physics (and of course the much cooler than physics; math we can calculate the individual wavelenghts using the speed of light, frequency and Plank's constant

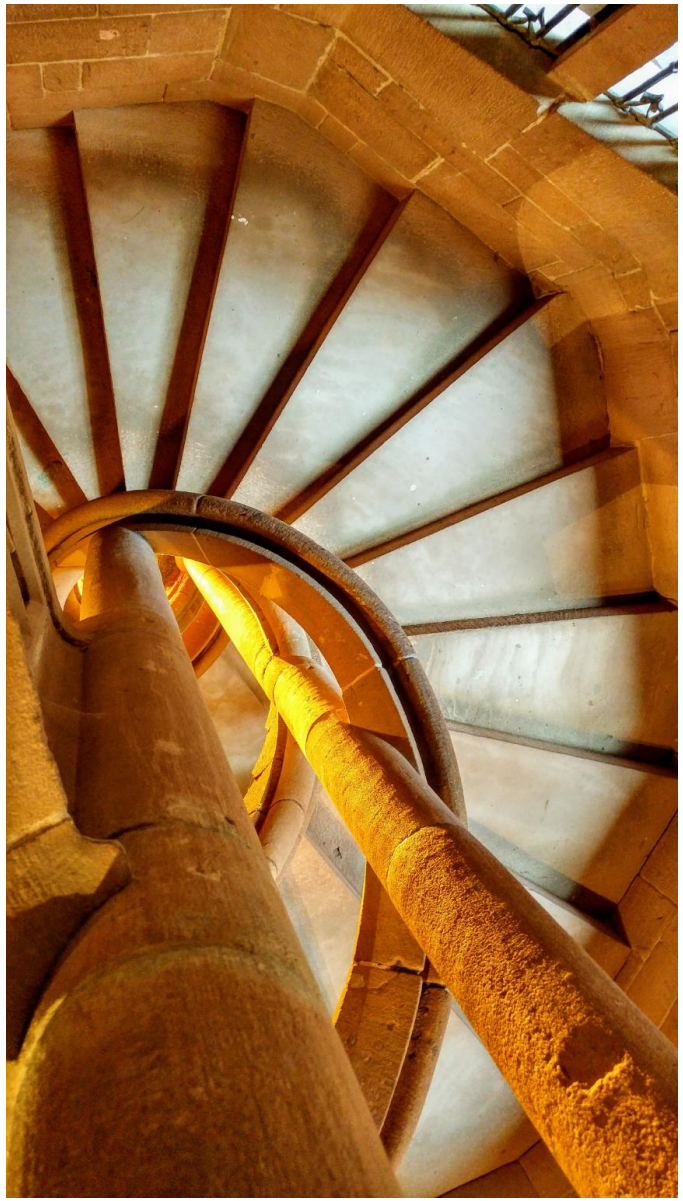


Foto7L

Foto7L

The staircase form a Fibonacci spiral from this angle. But from the birds-eye view, it actually has a cylindrical spiral shape, often used for screws too. Fibonacci sequences are seen in nature often, for example in sea shells and certain ferns. It is said to be the “perfect spiral” and the most beautiful spiral

Foto8L

Uses a ovular spiral in a cone shape which does not lead to the apex but ends at a ovular shape; where it looks like it is a cross-sectional plane of an ovular cone. From that cross-sectional plane a web shape is formed. The web is usually formed in a polygonal shape, where a regular spiral is anchored onto straight lines that come from the centre outwards. The centre ends with a oval shape which is again a cross-sectional view of the cone cut horizontally at that height.

Foto9R

Foto9R

Foto10N

Foto10N

This photoes are showing a fully spherical building, that is located in the center of the international financial center of the city of Nur-Sultan in Kasachstan. It is a fully spherical building with a height of 100 meters and a diameter of 80 meters, which has no analogues in the world. The sphere consists of three parts: a base, a metal shell, and cable-stayed structures. This pictures are related to mathematics, since formulas such as the sphere, A= 4 π r2,rules such as the cosine, sine, and different formulas of the area, rectangle with length x width, triangle with ½ x base x height, circle with π r2 ,were used to create the construction,such formulas became the basis of the building. Measurements, geometry, trigenometry and probabilities played an important role in the development of the building

Foto11P

Foto11P

Ich verbinde das Bild mit Math da man ja in der Mathematik auch wurzeln zieht und man oft aus spaß dagt das man die Wuzel gezogen hat

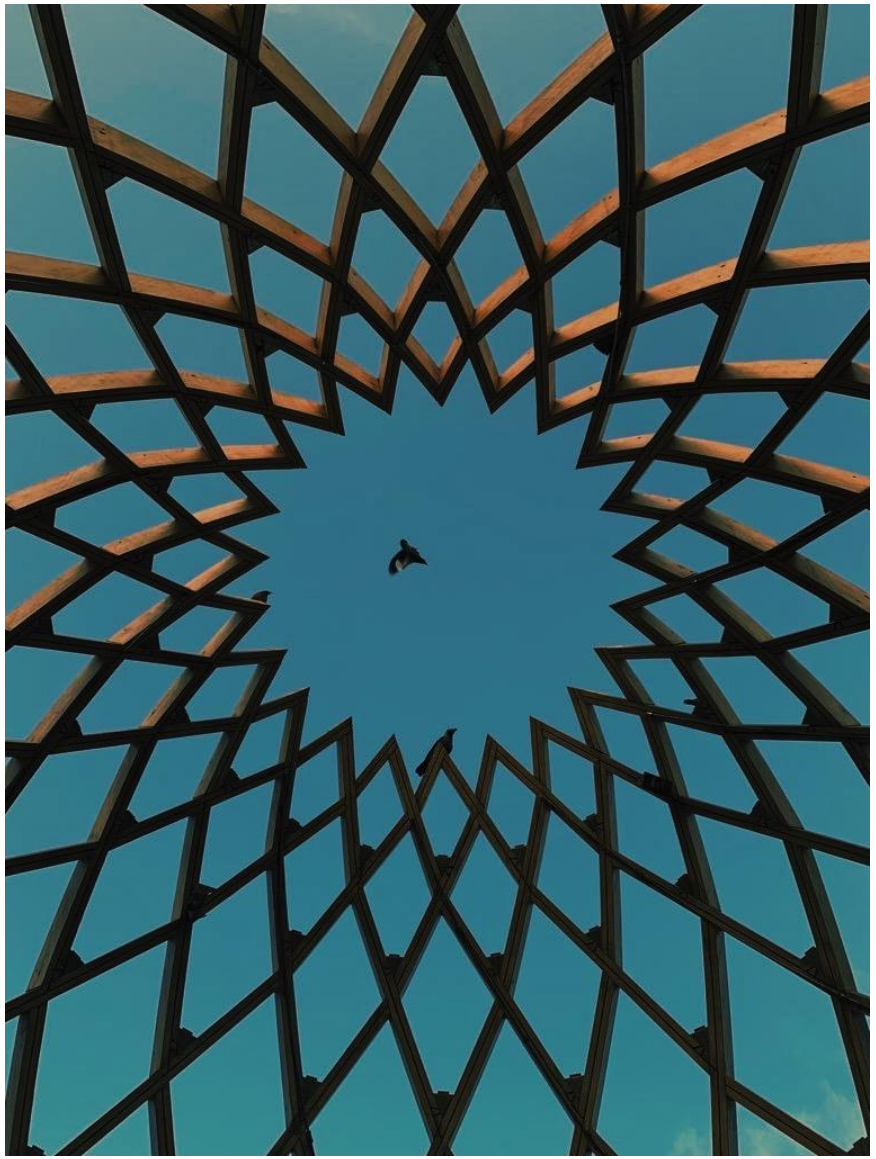


Foto12A

Foto12A

Blackbirds The following photograph illustrates the mathematical process of problem solving, which is portrayed through the changing sizes of the diamond shapes in the fascinating architecture. How, you may think? The diamond shapes start off with a big size at the base, which could be interpreted as a mathematical problem that a mathematician needs to break down in order to solve, and the problem starts off big. And then, the diamonds begin to shrink in size as the artwork increases in height, which represents the process of solving an equation or a problem, and the smaller the diamonds get, the closer the answer. But as the diamonds get smaller, they blasts into an opening. The opening represents the success in solving a mathematical problem and the sense of relief that is gained from the process. The blackbirds at the tip represent freedom, and as the photograph captures the moment of a blackbird flying high, it could represent the next steps of solving new problems, which could be really applied to our daily lives. Our lives are full of problem solving, and everyday we solve a problem, we learn how to solve the next one, and the next one.

Foto13B

Foto13B

I thought it was the best picture where you can see math in real life.
On the picture I would calculate the slope of the ski lift.
Auf dem Bild würde ich die Steigung des Ski Liftes berechnen

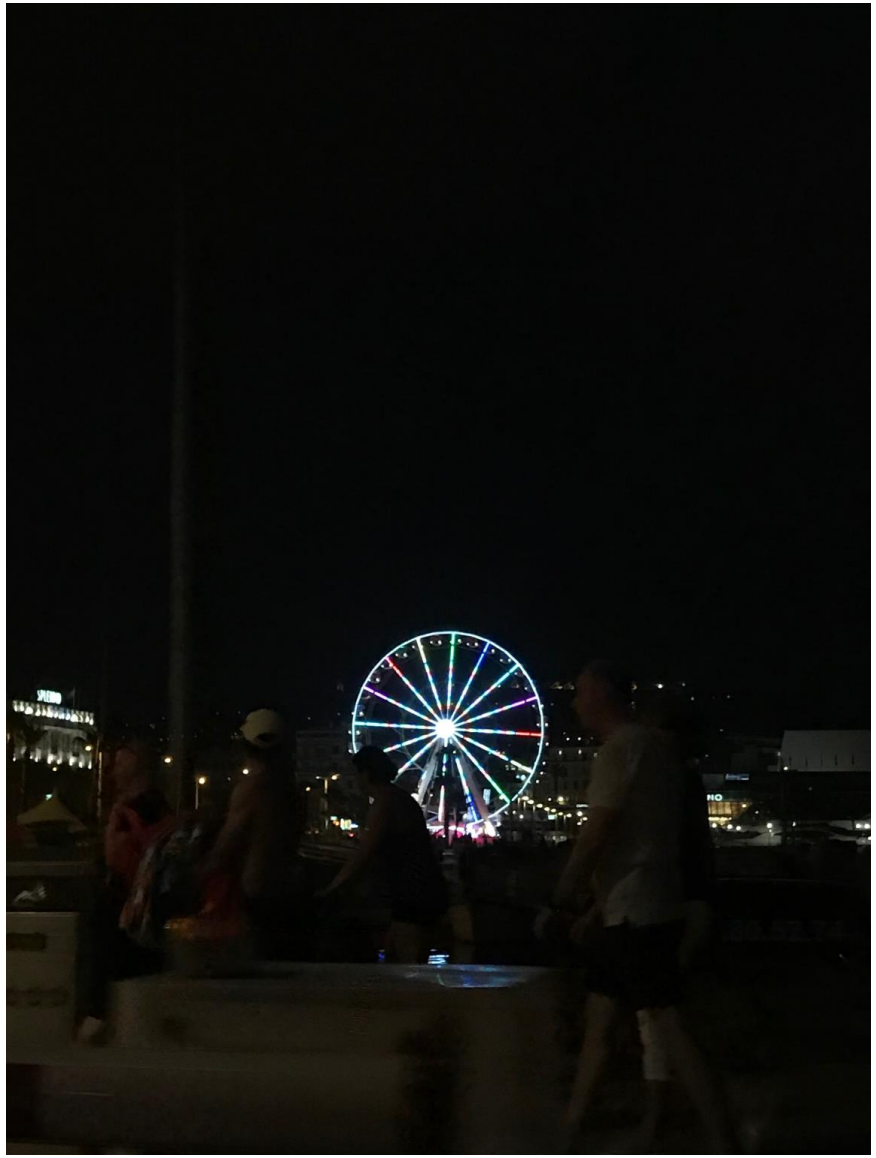


Foto14P

Foto14P

This ferris wheel is mathematics for me, because it shows one big piece which is divided into 16 parts. This reminds me of calculating fractions in mathematics.
Dieses Riesenrand ist Mathematik für mich, da es ein großes Stück ist, welches in 16 kleinere Teile aufgeteilt ist. Es erinnert mich and die Bruchrechnung in der Mathematik.

Foto15H

Foto15H

It shows many rocks with different shapes and positions. It makes me remember geometry we're we also work with different shapes and sizes of objects

Foto16V

Foto16V

This interplay of different lights reflecting onto the walls creates images that look like several geometric planes within a given space, some intersecting eachother, creating additional, clearly distinguishable planes of intersection.

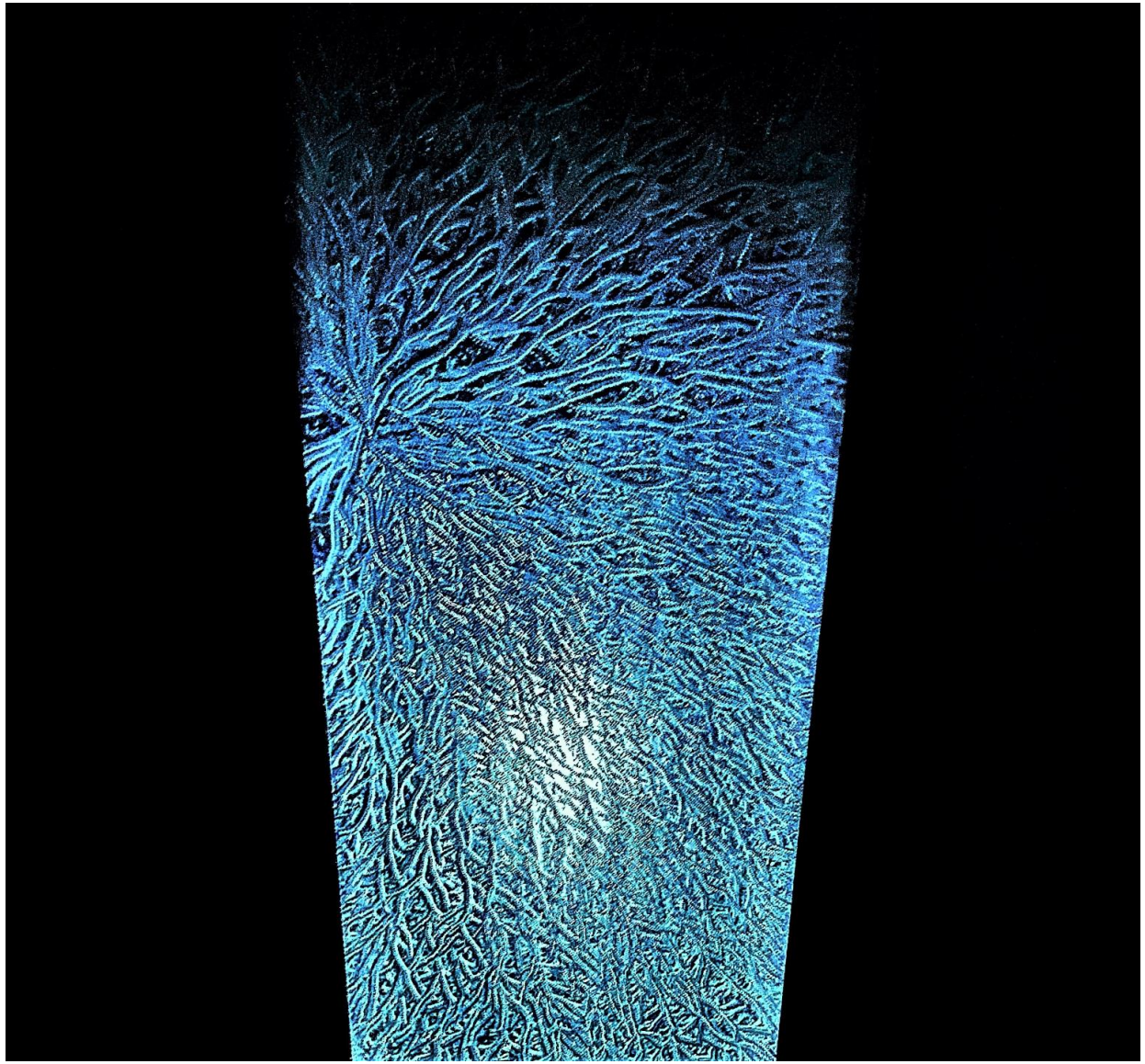


Foto17V

Foto17V

This pattern gives the impression of lots of lines, straight as well as curved, and partially functions of sine, cosine, and tangent merging and intersecting with one another to create this texture of ice

Foto18S

"Handy 5 Euros". The picture shows 11 coins (1x1ct 2x2ct 1x5ct 2x10ct 1x20ct 1x50ct 2x1€ 1x2€). For me its math, because money is one of the easier ways to learn basic maths. Further it´s something we use every day and have been using for 2500 years. The special thing about these particular coins, is that with these coins you´re able to buy anything below 5,01€ and you only need 11 coins which is the Minimum

Foto19H

Foto19H

The Here showed Stones are Mathematics, because there are billions of different ways they could arrange and all this ways can be calculated. In nearly all of this possibilities, the stones are sorted randomly (e.g. some are laying and some are standing). There are way less possibilities when the Stones are sorted (e.g. all Stones are standing upwards). Mathematically its way more likely that disorder will occur

Freedom can be there

Freedom can be there

Math interacts with every moment in our live without us even noticing. Math isn't only about numbers or equations it explains how the world is shaped. So, every art piece represents a kind of math.
This photography was taken in a garden, in the Jewish museum in Berlin. It is a piece of Daniel Libeskind and is called zwischen den Linien (between the Lines), the idea of it was to show the Jewish history.
These high reaching concretes pillars symbolize a labyrinth, but the nature planted on top of the pillars should remind us that there is freedom. Meanwhile the sun is also shinning on the plants, which make them throw a shadow on the pillars making them seem more powerful, then they are already.

Fuego

Fuego

Geometría del conocimiento

Geometría del conocimiento

En la estructura de la Biblioteca Nacional de Luxemburgo se pueden diferenciar distintas formas geométricas que albergan dentro el conocimiento.

Geometria diversa

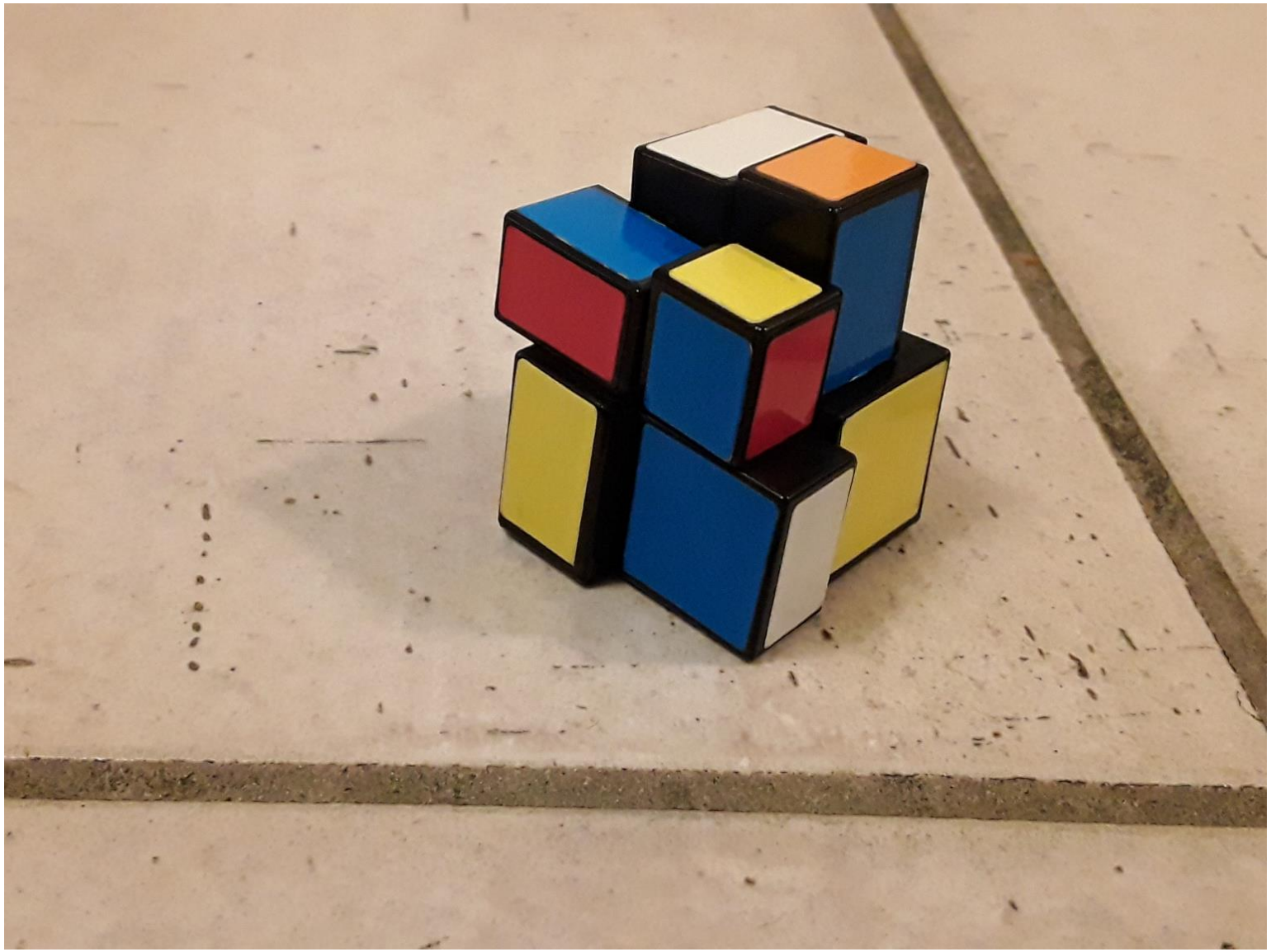
Geometría diversa

Geometría diversa: En esta foto podemos apreciar una vista de La ciudad de las artes de Valencia. Un lugar donde se aprecia como las formas geométricas están presentes en todos los lados.

Gráfica de cristal

Gráfica de cristal

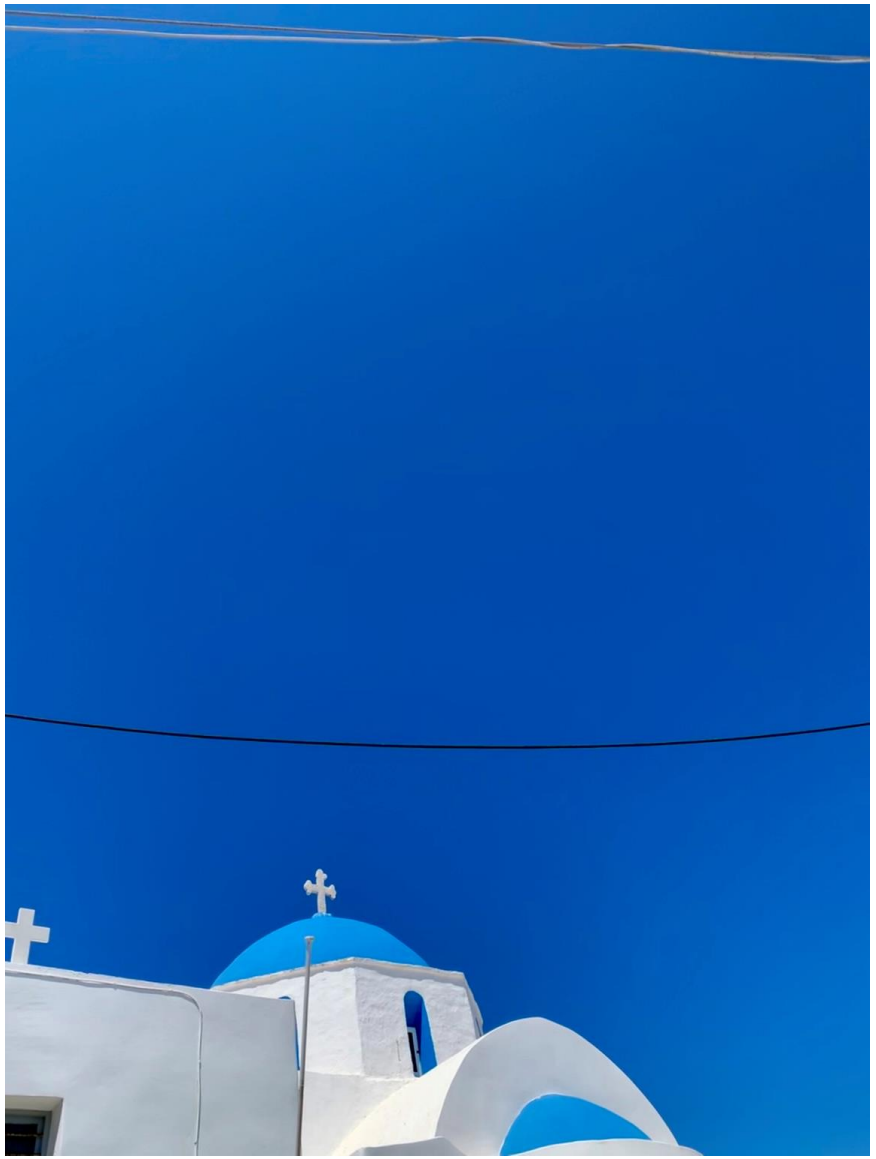
La foto es del Palacio de Cristal en Madrid, España. Las paredes del edifico se parecen mucho al papel cuadriculado utilizando en matemáticas.



Happy Mistakes

Happy mistakes

This picture shows us a disordered mirror cube. Most people like to see a perfect, solved cube but personally I prefer to look at a disordered one, because it reminds me of people who accept their physical or mental mistake(s) and still want to achieve what any other perfect person can do. They may see their inaccuracies as a happy mistake. The colors on the cube are the primary colors. For me they symbolize the founders of our ways, due to that mixing colors will give you other possibilities as colors have shades. And of course the geometrical shapes do have to do with Mathematics, which symbolize the parts of the human body.



Hellenic Heritage

Hellenic Heritage

This is a picture taken on the Greek island of Paros in the Cyclades. The simplicity of the building shows how maths is a perfectly sculptured subject and is objective and has no ‘maybes’. In contrast with the arts but yet both can come together in a beautiful way. Historically, maths was invented in Greece, which has a link to this photograph and was my logic behind the naming of the photo.

Huella

Huella

Illusions and Interpretations

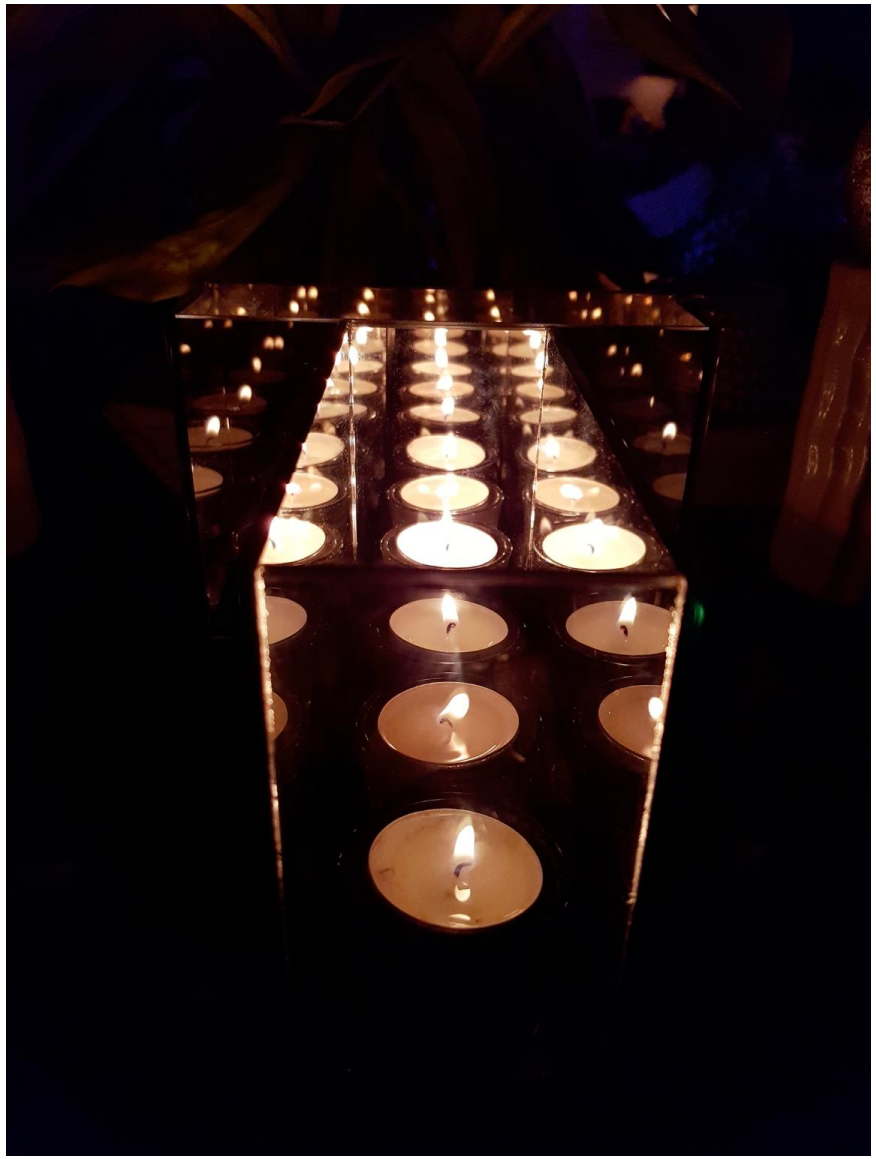
Illusions and Interpretations

Here we can see a playground which represents lines and circles. I think that math's isn't just be about additions and subtractions but more about explanations and interpretations of our world. And you can see it everywhere in our daily lives. In both of those subjects, you have similarities such as the perspectives and transformations of the visible world. I like my picture because you have symmetry, which I think is the most important thing in math and art. So, both subjects are illusions and you can interpret them as you like. On the picture below you think there is a reflected sunset, but it is only the streetlights which are reflected on the metal poles.

Iluminación perpendicular

Iluminación perpendicular

He escogido este título ya que veo rectas perpendicul ares, paralelas, ángulos rectos, cuadrados y rectángulos



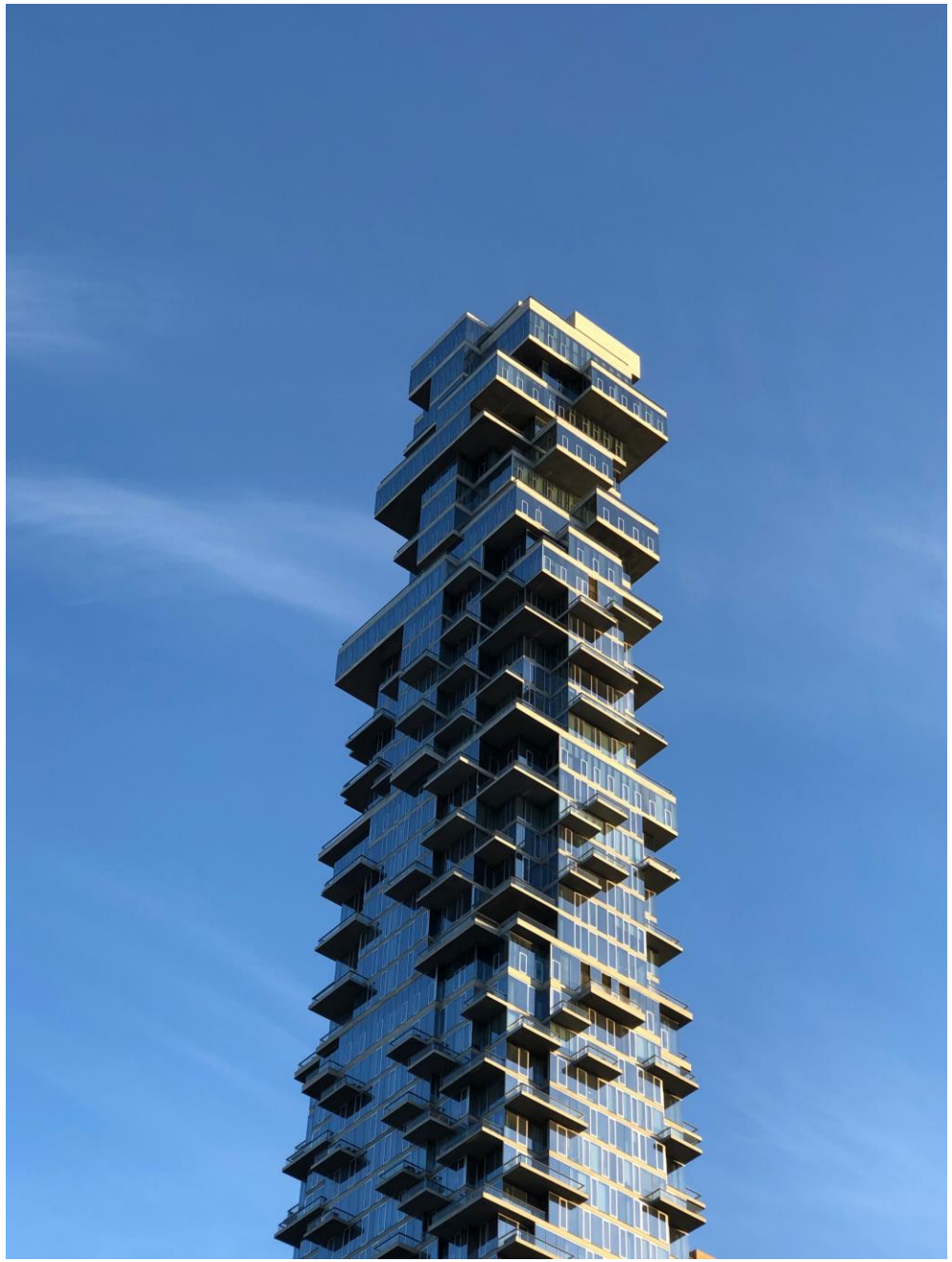
Infinite Loop

Infinite Loop

In math, there will always be a step further after the previous problem and idea. As if mathematics is an infinite loop of problems, situations and ideas waiting to be solved by someone. So, this photo is a simple but unique way of demonstrating that there is, in fact, no ending to mathematics. In this photo, you can perceive more than 15 candles, however there are only in total 6 candles. This is due to the 6 candles being inside 2 T-shaped mirrored containers (3 candles in each container), which brings the illusion that conceives the eyes to think there are more than 6 candles. The mathematical theme is geometry (the circles and the properties of space and matter). To finalize, this photo also brings a feeling of coziness because of the warmth radiating from the candles.

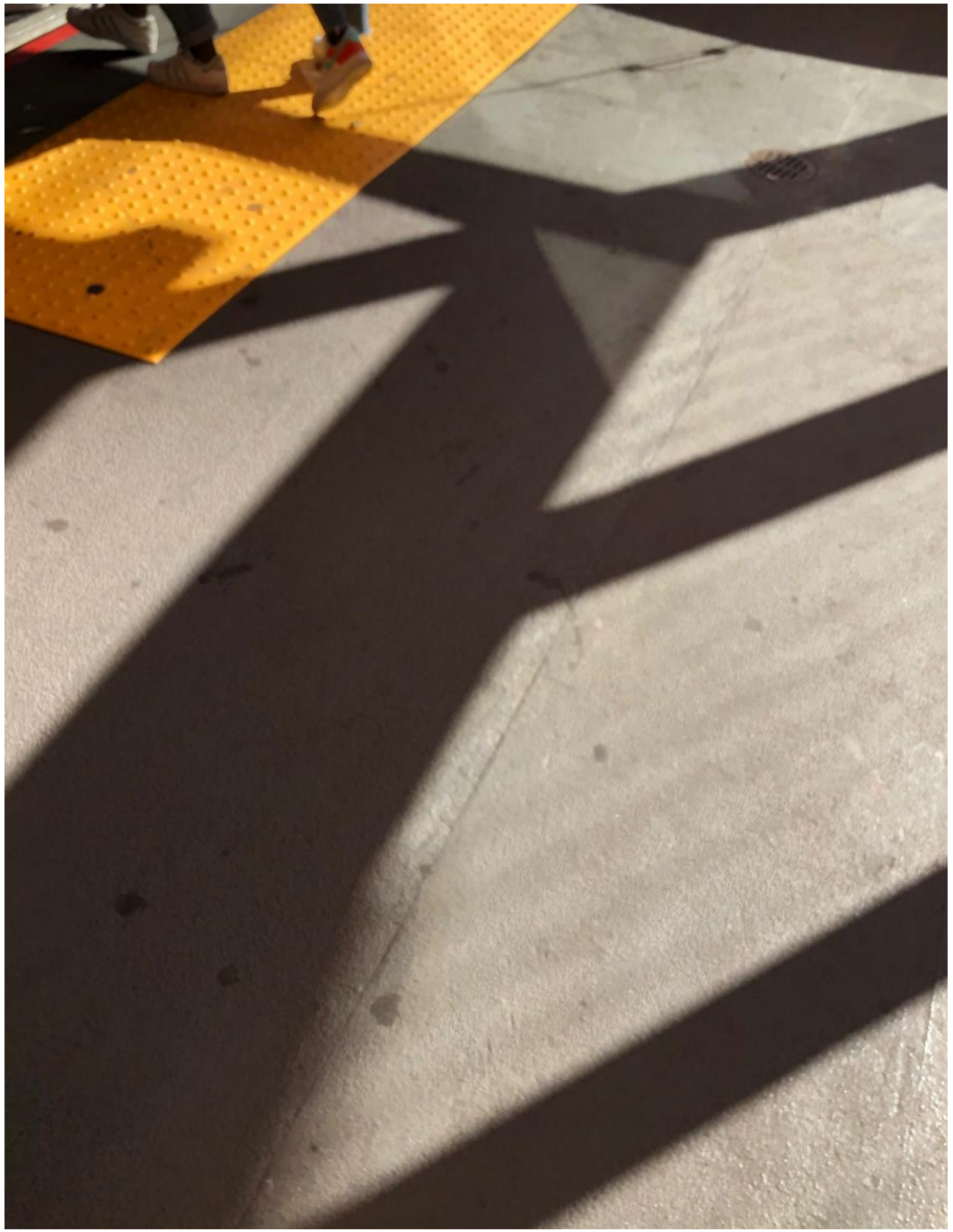
Inversion

Ce hublot de forme circulaire, avec au centre ce segment qui représente le rayon du cercle m’a fait penser aux mathématiques. On peut y voir un croissant, des cercles tangents, et avec un peu plus d’imagination une éclipse solaire inversée. J'ai choisi de prendre cette fenêtre de ce point de vue pour que l'obscurité de l'intérieur mette en valeur le paysage et les couleurs de l'extérieur.



Jeu Jenga

Cette tour, située au numéro 56 de Leonard Street, est la nouvelle folie architecturale de New York, dont la hauteur est de 250 mètres. Elle comporte 60 étages. La superposition de formes géométriques rappelle le célèbre jeu de société, le Jenga, mélange d'adresse et de réflexion, dans lequel les joueurs ôtent des pièces de la tour pour les repositionner à son sommet jusqu'à ce qu'elle finisse par perdre l'équilibre. La pureté des volumes et l’essentialité des lignes sont incarnées au mieux par la composition raffinée, dont l'équilibre est la clé de son élévation. Plongée dans l’immensité du ciel bleu, les surfaces de ce bâtiment reflètent magnifiquement la lumière du soleil, provoquant ainsi des phénomènes de réflexion et de réfraction



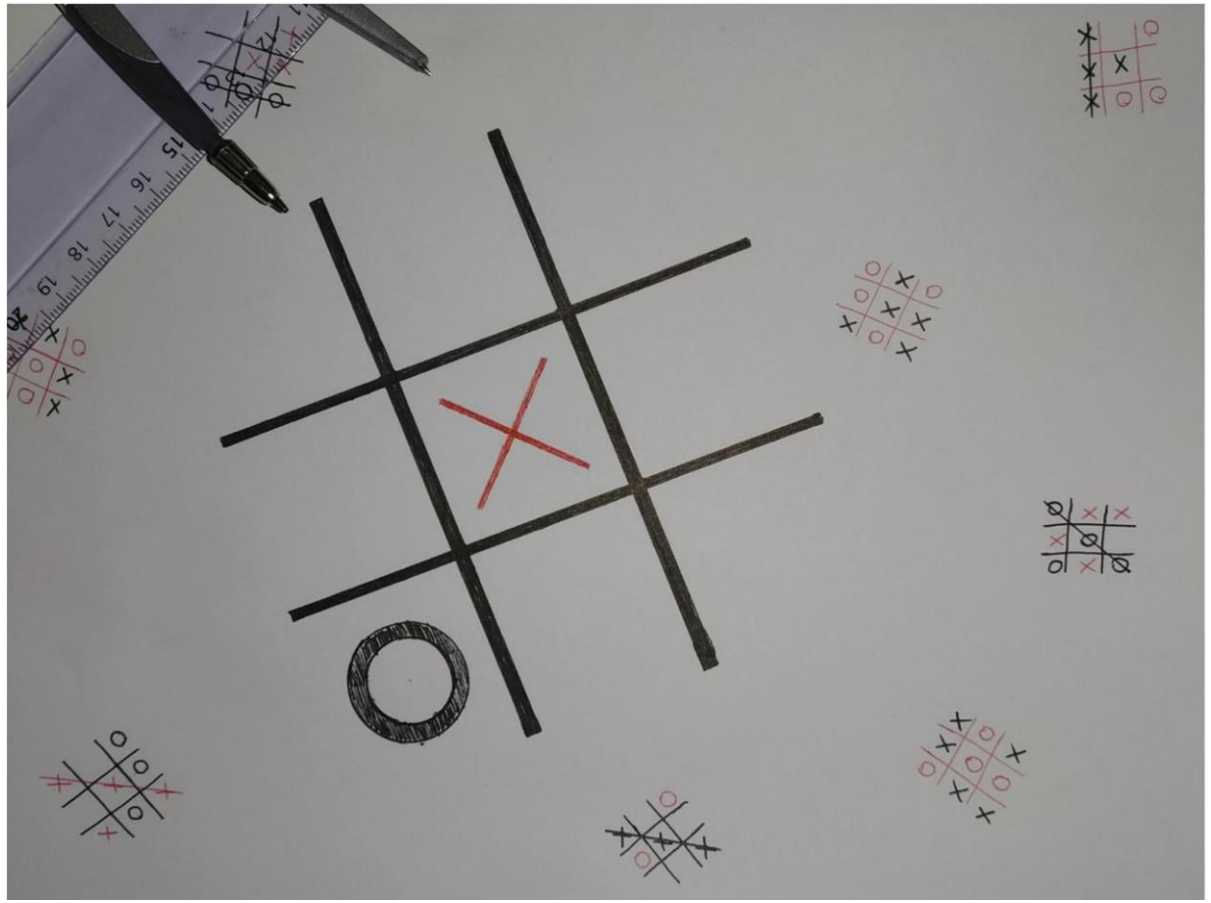
Jeu Tangram

On peut voir ces ombres au Tramway Plaza situé à la 60th Street de Manhattan, à New York. Cette ligne de tramway amène les touristes à Roosevelt Island, une île dédiée au Président Roosevelt. La lumière du soleil passe à travers les vitres de la structure et projette au sol ces lignes qui évoquent le Tangram. Le jeu Tangram est une sorte de puzzle chinois appelé aussi le jeu des sept pièces. Celui-ci se compose de sept pièces qui peuvent se juxtaposer pour former un grand carré de surface 16 fois plus grand à l’unité triangulaire utilisée. La ruse et l’habilité mathématique sont nécessaires pour réussir à trouver le plus de configurations possibles

La complejidad de lo simple

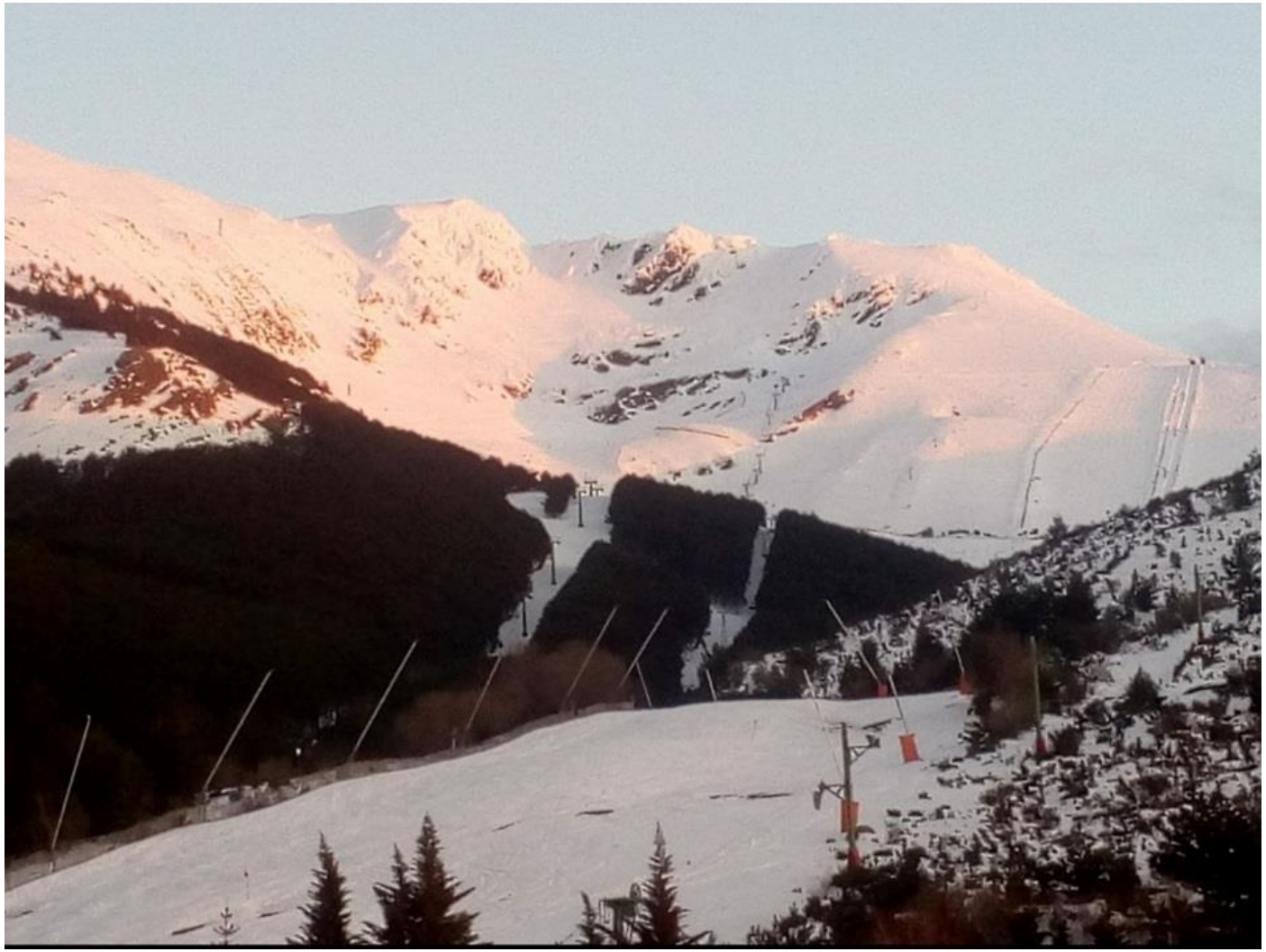
La complejidad de lo simple.

La complejidad de los simple: Está foto la tome en mi viaje a San Francisco, el famoso Golden Gate Bridge. Observamos las líneas paralelas en repetición contínua, diferentes formas geométricas formando algo más que un gran puente



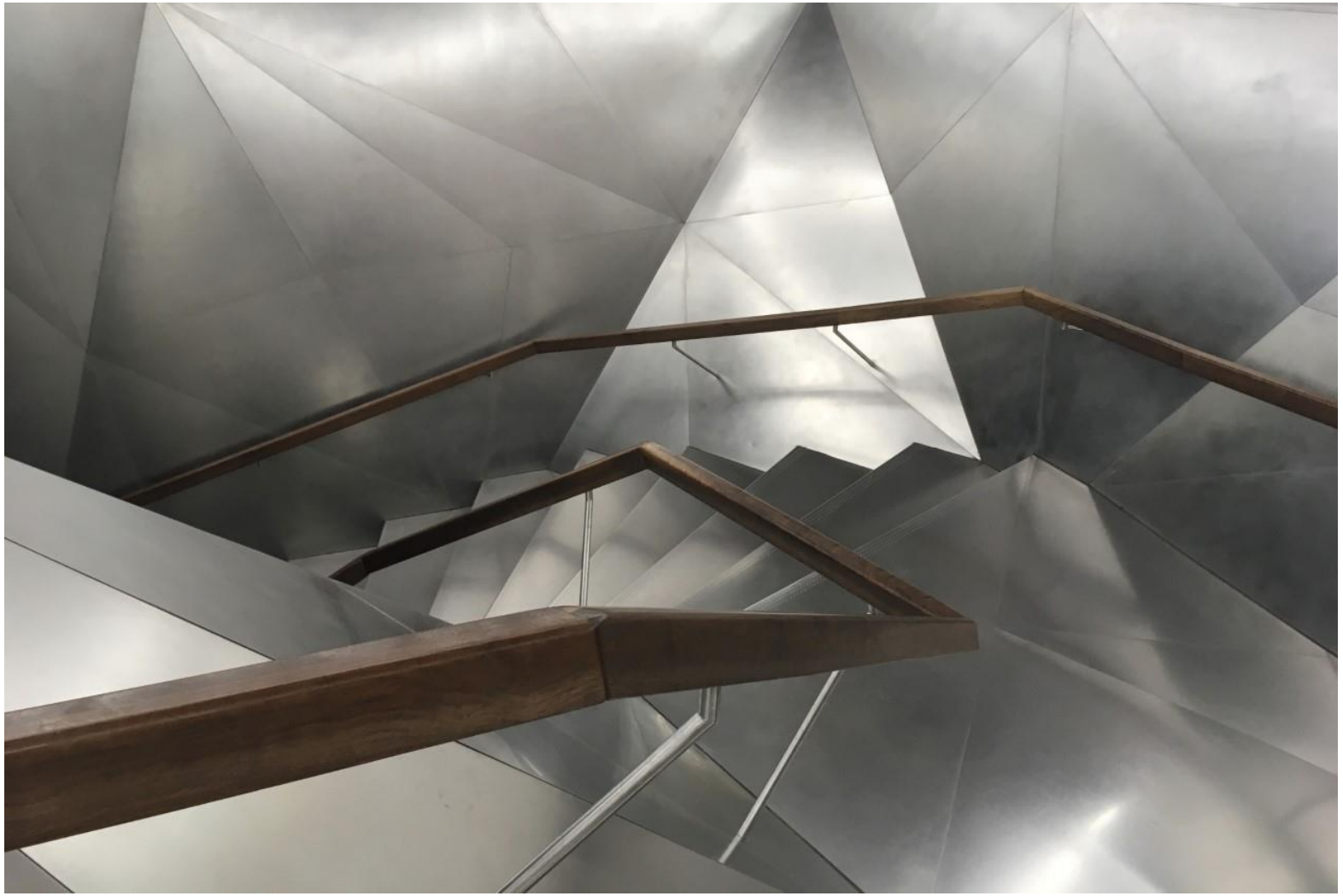
TIC TAC TOE

Tic tac toe is a game we have all played. When we first play tic tac toe most of us probably have no idea that this simple game can be related to mathematics in more than one way, we later start to notice the multiple relations between the game and science. Probability is a topic studied during math lessons and probably also the topic that can be best related to tic tac toe. There are so many different ways of placing the X and O on the 3x3 board in order to win. Furthermore, the chances of winning are different each time we play the game due to all these different combinations we can have. The board that is used for the game is also related to lines and symmetry. The are two pairs of parallel lines, which intercept each other to create 90° angles. Lastly the lines also form a square in the middle, which shows that geometry is involved in the construction of the board and therefore the game as well. As kids it is hard to understand that everything (even the smallest details in life) evolves around mathematics but as we get older we realize more and more with each passing day that math is actually the study of life.



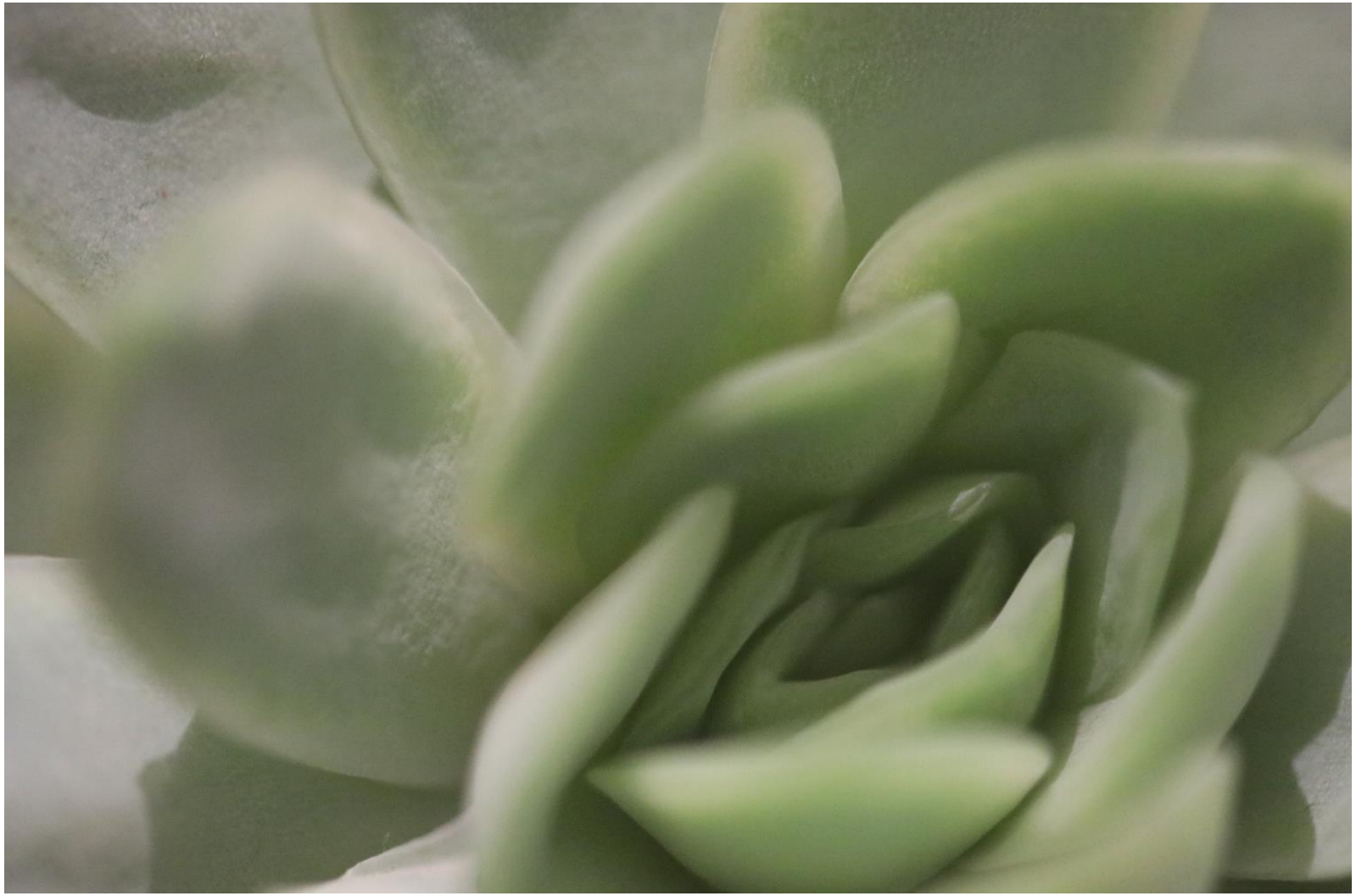
La Pinilla

La Pinilla



La reflexión continua.

La reflexión continua: Tome esta foto en una escapada al museo del Caixa Forum de Madrid. Podemos observar como las líneas rectas forman figuras de gran complejidad que pueden llegar a dar la sensación de líneas curvas. Una continuidad reflexiva



La vie + le temps = objet fractal

La vie + le temps = objet fractal

Chaque plante est semblable à une de ses parties. On peut trouver des formes fractales partout dans la nature. Chacune des feuilles de cette plante est approximativement similaire a toutes les autres. Les plus vieilles sont les plus grandes et se trouvent à la base, donc au début de la plante, plus jeunes les feuilles, plus petites et plus loin de l'origine. La forme se répète à l'infini, dans la mémoire de la vie.

Las circunferencias embotelladas

Las circunferencias embotelladas.

Las circunferencias embotelladas: En el fondo de la cantimplora, tan simple se observan las circunferencias de mayor a menor.

Las matemáticas y el arte

Las matemáticas y el arte

Las matemáticas y el arte:
Esta fotografía demuestra que las matemáticas están muy presentes en nuestra vida, y por su belleza, los artistas la incluyen en sus obras y exposiciones como se muestra en esta imagen, además se puede observar el contraste de estas banderas con las formas geométricas del Palacio de Cristal.

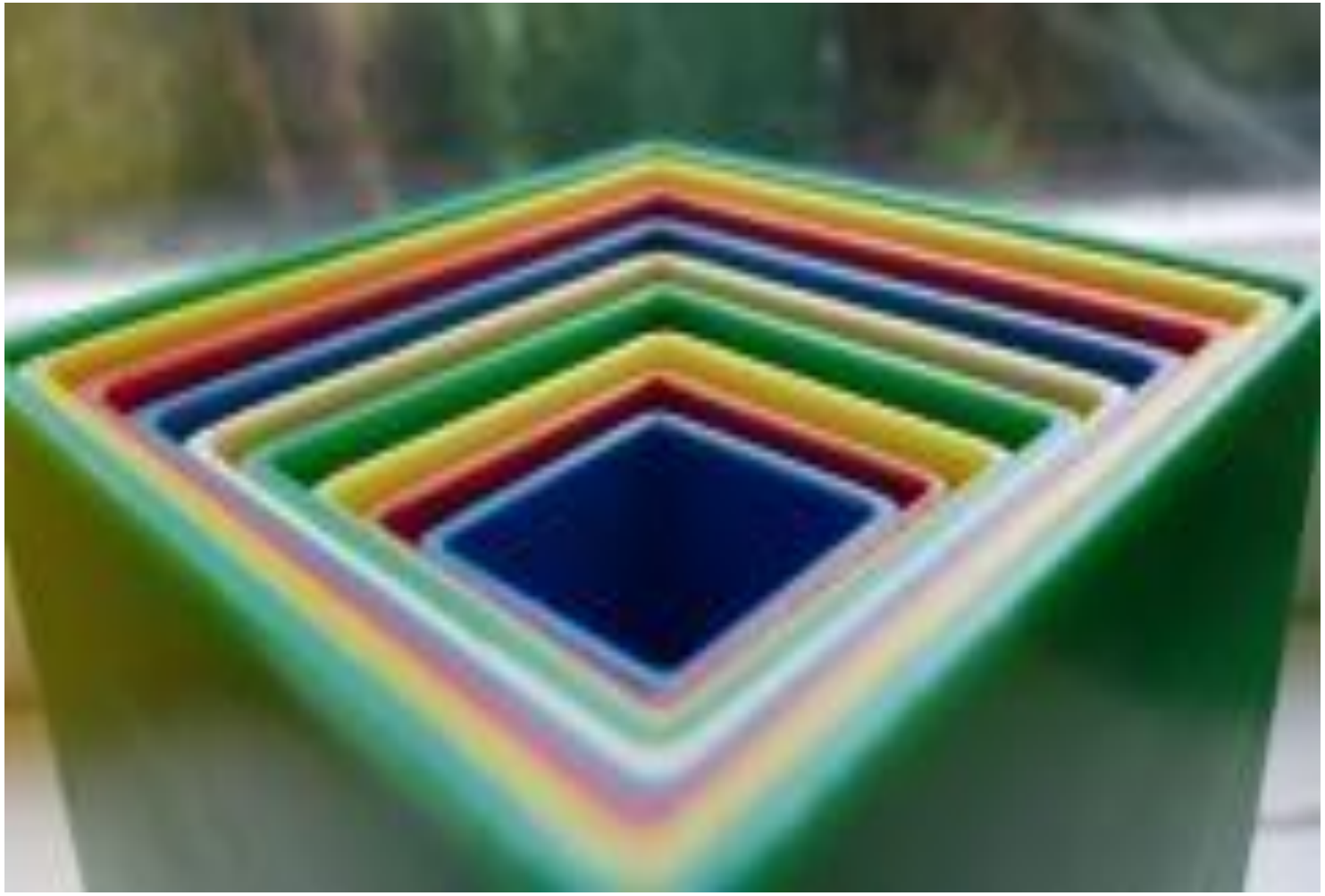
Lasagna

Lasagna addition Whilst eating Lasagna one day I began to ponder a mathematical query: if one was to begin stacking lasagnas up above upon another, the end result would still ultimately be a single (rather tall) lasagna, hence 1+1=1. In normal addition this would be a contradiction, but this is Lasagna addition. Inspired by this culinary breakthrough, I created a new operation; 1*1=1. A*B=C * 0 1 0 0 1 1 1 1 Properties of the operator 1) Closed: The operator is closed since all the elements belong to the same set, which is, in this case: {0,1}. 2) Non-abelian A*B ≠ B*A For example: let A=1 and B=2; 1*2=2 since one puts the lasagna on the 2 lasagnes but, 2*1=1 since one puts the 2 lasagnas on the 1 lasagna which will create one large lasagna. Therefore, A*B ≠ B*A

3) Associative Order does not matter, one can simply ignore the parentheses. (A*B)*C=A*(B*C) Even if it is not abelian, it is still associative. E.g. let A=1,B=2 and C=3; LHS= (1*2)*3=2*3=3 and RHS= 1*(2*3)=1*3=3 hence, RHS=LHS 4) Identity element A*0=0*A=A; therefore, 0 is the identity element. 5) No inverse A*A-1=0 but since it is addition, A*(-A)=0, e.g. let a=1, you cannot have -1 lasagnas. Hence, there is no inverse. Since there is no inverse, this operator is not a group but rather a MONOID and since it is not abelian, it is a NON-ABELIAN MONOID

Le disque du spectre

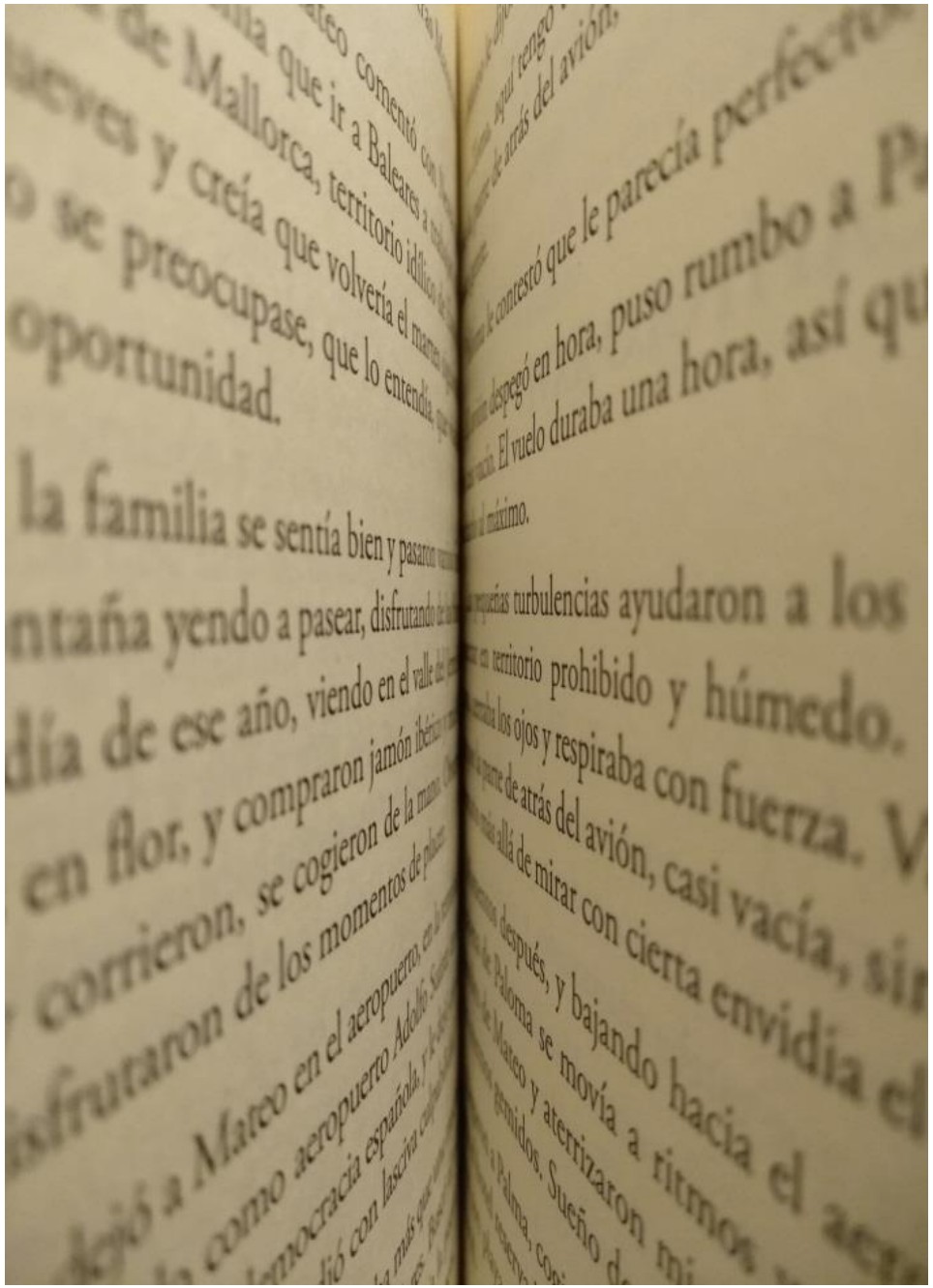
Le disque du spectre: La photo rappelle l'image d'un disque et ses sillons. Quant au spectre, il s'agit ici de la représentation graphique des différentes notes musicales. Le centre du disque crée une illusion d'optique qui met en doute la réalité de l'effet. S'agit-il de profondeur? Je n'en suis pas si sûre...



Lempilage de couleurs

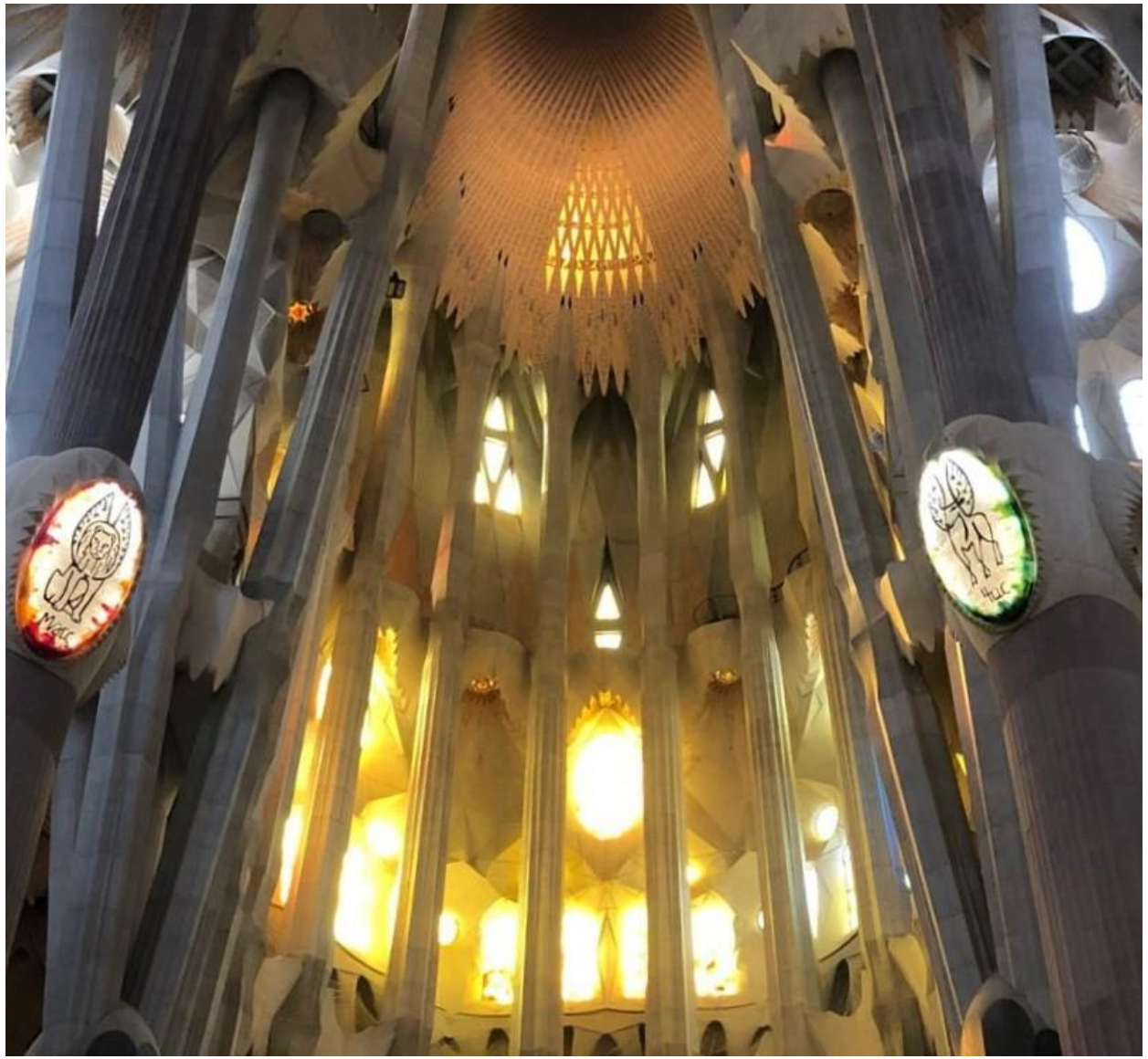
L'empilage de couleurs

L´empilage de couleurs: Sur cette photo, on voit 9 cubes de tailles et couleurs différentes qui s’empilent en fonction de leurs dimensions.Si y =l’ordre de l’empilage, x= un cube, a= une dimension et b= une couleur, alors y = ax+b .La couleur du cube ne détermine pas l’ordre de empilage. L’empilage des cubes est égal à une fonction affine.


que ir a Baleares
de Mallorca, territorio idílico
eves y creía que volvería el
o se preocupase, que lo entendía
oportunidad.
la familia se sentía bien y pasaron
ntaña yendo a pasear, disfrutando
día de ese año, viendo en el valle
en flor, y compraron jamón ibérico
corrieron, se cogieron de la mano
oofrutaron de los momentos de
dejó a Mateo en el aeropuerto
como aeropuerto Adolfo
democracia española, y
lió con lascivia
despegó en hora, puso rumbo a
El vuelo duraba una hora, así
turbulencias ayudaron a los
territorio prohibido y húmedo.
los ojos y respiraba con fuerza.
de atrás del avión, casi vacía,
allá de mirar con cierta envidia
después, y bajando hacia el
Paloma se movía a ritmos
Mateo y aterrizaron
gemidos. Sueño

Libro

Libro



Lights Play

Lights Play

This photo was taken in Barcelona. We can see the architect thought about every detail of his artwork, which we might even call a masterpiece. We can even see how he plays with the sunlight in a very creative and peculiar way. That's why I have named my photo Lights Play.

Modern Lines

Modern Lines

Les lignes sont partout dans cette image, que ce soit les colonnes de béton, les ombres de celles-ci, mais aussi la barrière et son ombre qui crée des millions de petites lignes parallèles. Les dalles de béton sont elles aussi formées de lignes. Toutes ces lignes sont soit parallèles (la barrière et l'ombre de celle-ci, l'ombre des colonnes et les colonnes elles-mêmes), soit sécantes (toutes les lignes formant les dalles de béton). L'effet noir et blanc permet de faire ressortir toutes ces lignes et de ne pas être dérangé dans la contemplation de l'image par les couleurs (tel que le vert des arbres de droite ou le rouge du bâtiment de gauche). L'impression de profondeur que donne l'image avec le rétrécissement des murs du haut et du bas est un atout de plus pour l'effet de cette belle image.

Mayor que, menor que

Mayor que, menor que

Mayor que, menor que:
En esta fotografía, aunque señale dos direcciones opuestas, al observar esta imagen, con una visión matemática, se pueden ver los símbolos mayor que y menor que.

Metales en el cielo.

Metales en el cielo: El concierto del Cocacola Music Experience, no solo una experienza musical. Si no geométrica, como los dichosos metales se unen en el cielo formando formas geométricas.

Morning Ghost

Morning ghost

This image captures a sunrise as it would be seen when squinting eyes- a bit blurred and duplicated. The two holographic tops of the roof shape a right angle where they meet, and the geometrical chimney formed of a rectangular parallelepiped and three equal cylinders fades away as it is blown by the wind. The sky is divided by pink traces of evanescent planes filled with matinal passengers, and the sunrise hues can now only be seen in distance. In the left upper corner, the triangular shape indicates the presence of the balcony above, also slightly duplicated. In the left down corner, it can be seen the "ghost" of the neighbor house fading into the sky and the doubled leafless tree. The duplication of some elements was obtained with a camera feature, and not as a result of a later edit.

MOTION

This photo combines my love of football with maths. We see a goalie diving to reach a ball cutting and ruining the perfect right angle of the football goal. We also see his other bent arm creating a distinct shape if the head was cropped out. This stance as well as the circular ball, are cutting the clean cut right angles of the metal bars and the serenity and perfectness of the shape that is the goal. Although this photo took over 100 takes to make I was very satisfied with the result and it was great fun doing it.

Multicoloured Light

Multicoloured Light

This picture shows a rainbow. Rainbows are made by refracting sunlight through raindrops and can only be seen from a certain angle. René Descartes, a French philosopher and mathematician, made the first detailed study of a rainbow. He discovered that when light moves from air through water, the light changes direction. This is because light travels in waves and travels slower in water. Snell's law defines that change in direction; it all depends on the angle of incidence. A raindrop, however, is far more complicated than a level surface of water as it is somewhat sphere-shaped. The light comes from one direction (the sun) and hits a waterdrop. The white light bundled together is reflected around many times inside the raindrop (refracts), and exits, scattering the light into seven colours in a caustic ray; red, orange, yellow, green, blue, indigo and violet, of which red, green and blue are the main colours to form the others. A rainbow can only be seen with your back towards the sun, since it is the light source used to form the rainbow.

Nature et lumière

Nature et lumière

Dans cette photographie d'une feuille d'avocatier (persea americana) on peut parfaitement apprécier les mathématiques au sein de la nature. Cela prouve l'affirmation de Galileo Galilei: “L'univers est écrit dans le langage des mathématiques”. Les mathématiques sont donc bel et bien possibles sans l'intervention de l'homme.

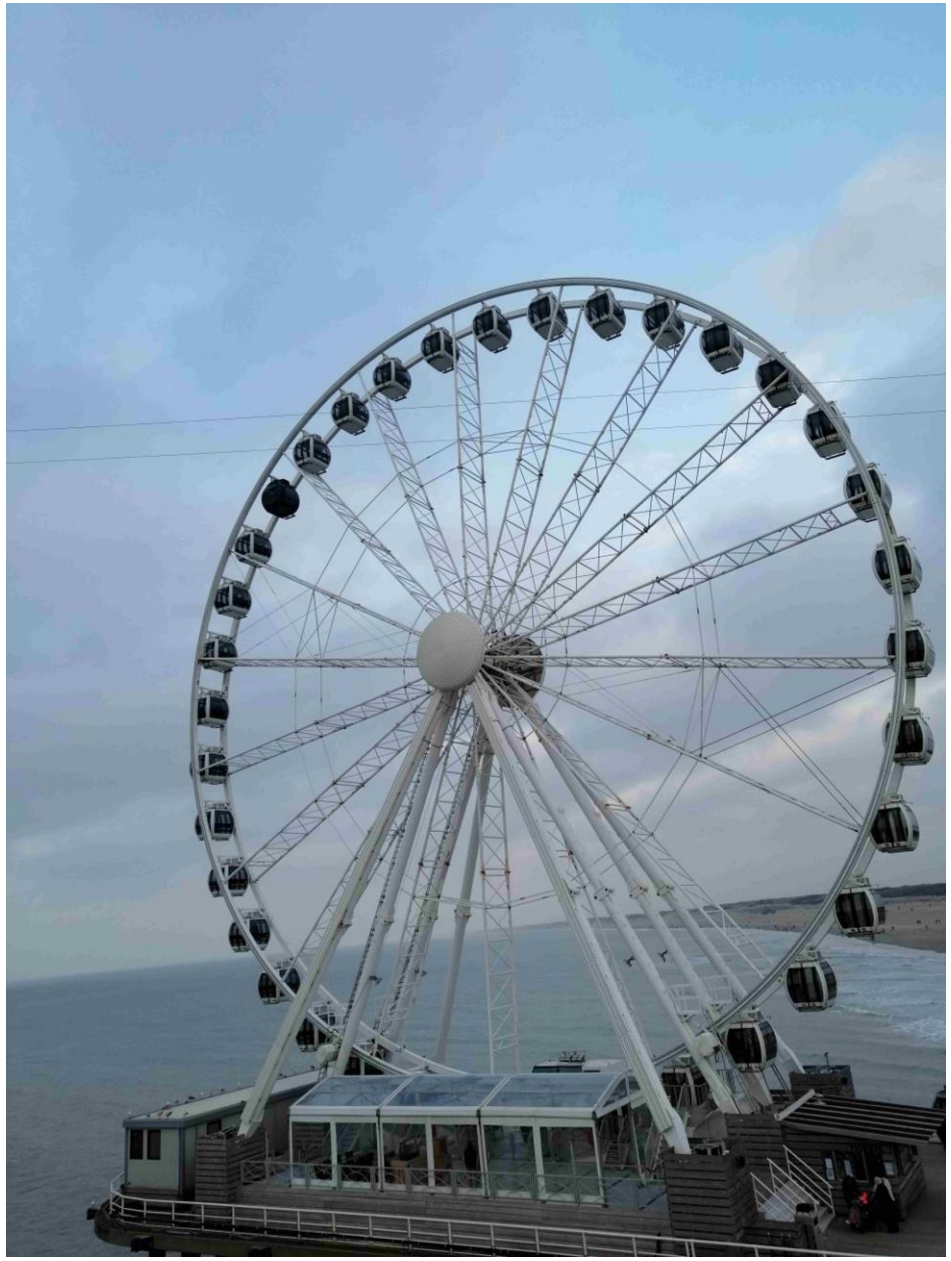
NUTS

I didn’t really have inspiration what to take a photo of in nature or in the world around me, so I tried to make something of my own. Using different nuts, and dried coconut I made some shapes one inside the other. This image has many mathematical elements, although it is not very accurate. The idea was that the original shape of a hexagon (outside) would slowly through the other shapes turn into a semicircular oval, represented by the Brazil nut in the middle. Also, materials that I made the structure of are shapes all by themselves as well. The cashews are arcs, the almonds are ovoids, and the little dried coconuts are cubes. The hazelnuts, although also more like ovoids, were intended to be spheres as to have something different and interesting.

Panes

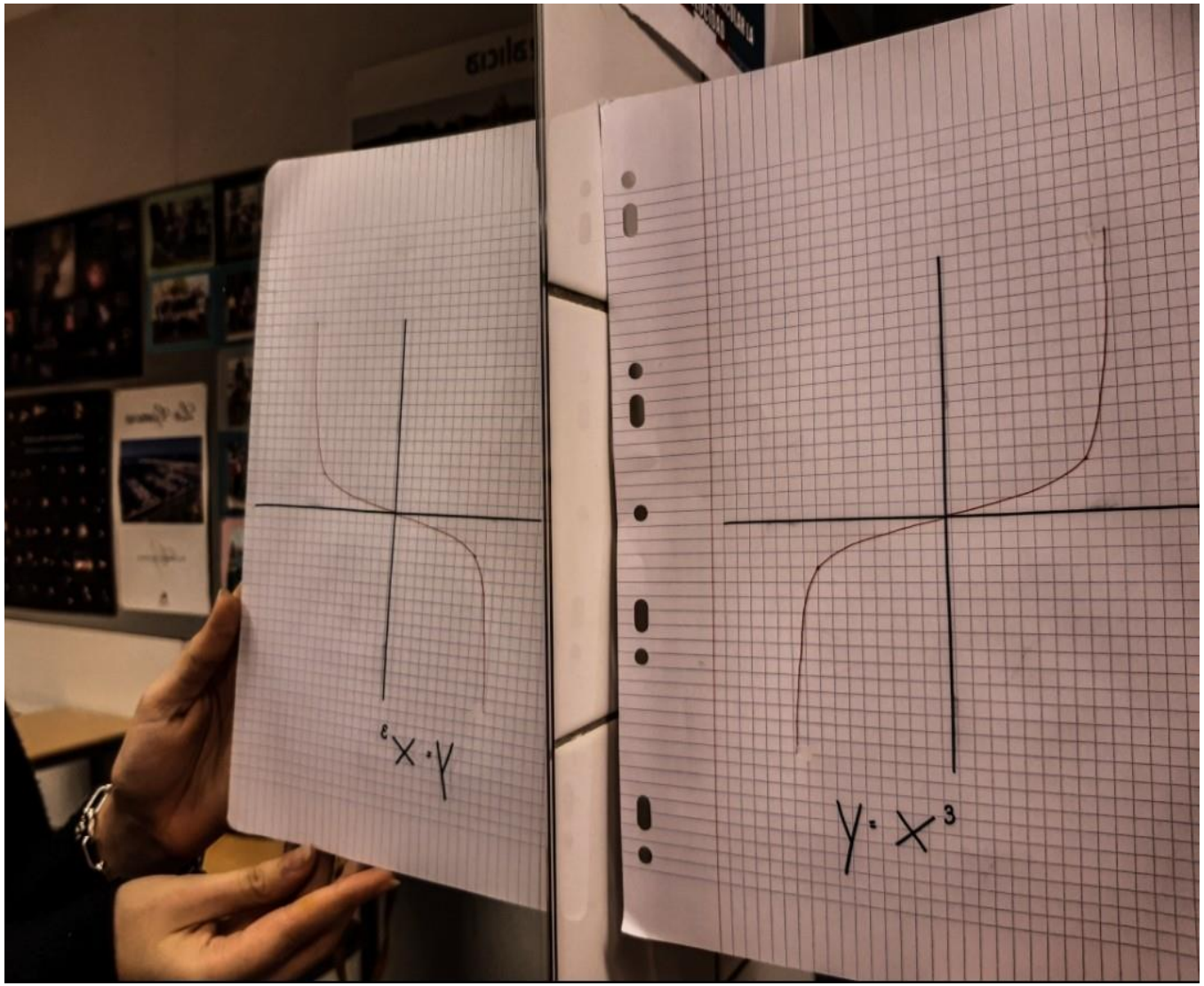
Panes

Panes: Esta imagen demuestra la importancia de nunca comerte los signos.



PANORAMIC WHEEL

This panoramic wheel is related to math because of the circular shape and all the lines that represent the radii. These two things are related because there is a formula for which using the length of the radius you can find the circumference of a circle by doing $C=2\pi r$. On the other hand if I have the circumference (C) i can find the radius easily by doing, $r=C\div 2\pi$. It's also related to math because to make the seats evenly separated they use the trigonometric function model



Par de la impar

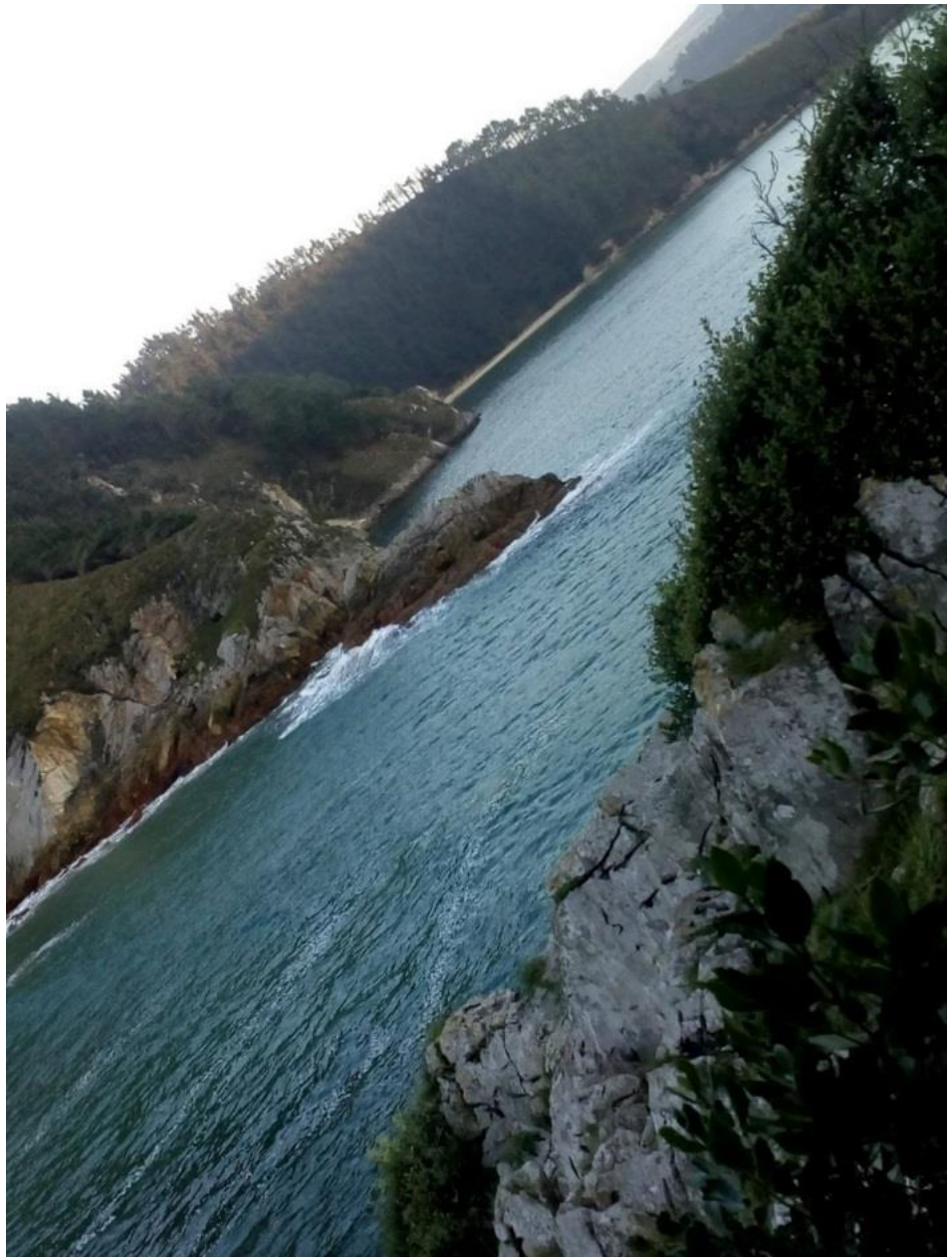
Par de la impar

Esta fotografía representa el reflejo de una función impar en el espejo. La fotografía se llama "Par de la impar" porque una función par es como reflejar en un espejo su imagen, en esta caso siendo una función impar.

Parábola de luz

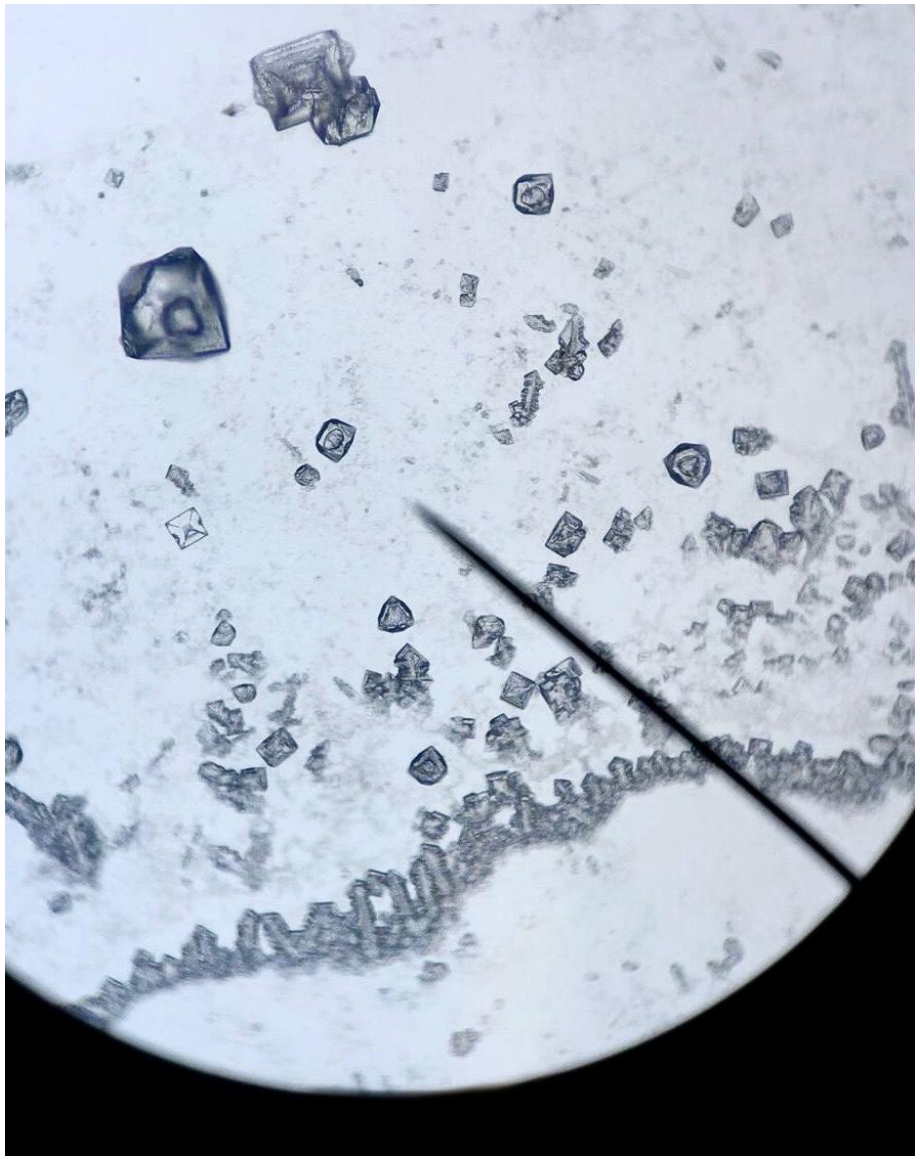
Parábola de luz

Parábolas de luz: Es una curva abierta formada por dos líneas respecto de un eje en el que todos sus puntos están a la misma distancia del foco y de la directriz



Paraí
so

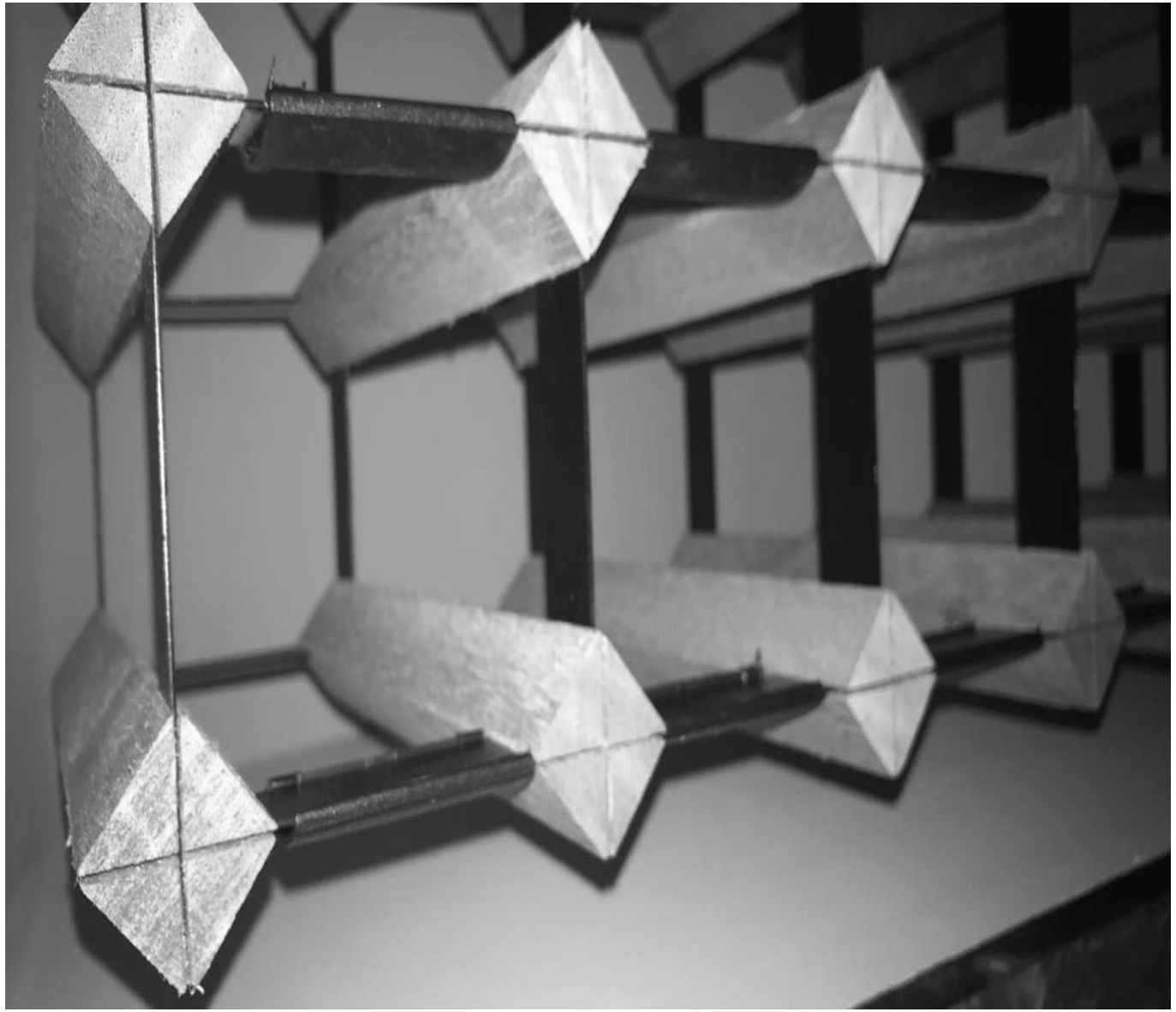
Paraíso



Particles

Particles

In Plato's "Theory of Forms", beauty is talked about as something that can be found all around us. This is because, for him, everything around us stands built out of 5 'perfect' particles. These particles are 'perfect' according to Plato because they are actually 5 geometric shapes, each following certain mathematical laws that make them 'beautifully perfect'. The perfect mathematical engineering of everything around us, including us, making it beautiful as it dies and is born again. The picture taken above captures NaCl crystals, just while forming, under a light microscope. By looking at the crystals, we can see how they appear as multiple, almost identical, geometric shapes building and moving alongside each other in order to form a greater whole we call "salt". The crystals shown in the picture, made up of such geometric shapes, serve as a 'perfect' representation of Plato's perfect particle theory.



PERPENDICULAR LINES AND 3D SHAPES

The property of being perpendicular is the relationship between two lines which meet at a right angle (90 degrees). In my photograph, as the wine holder is made out of squares, each wire intersects, and creates a perpendicular image. Not only are there 2D squares but 3D as well. The squares are elongated to the back to make a stable wine holder. The design of this is very peculiar, but it works. I took this photo due to the fact that even the simplest of objects has something to do with math. That math is in fact, everywhere.

Photomath

Photomath

This is a picture taken in august with evening light coming from the sea. At the first sight it might not seem like a mathematical picture, but It has some mathematical aspects. There are multiple right angles where the lantern pole meets the skyline and the string of cloud and the skyline together go somewhat parallel. As photographer I managed to place the lantern light on the string of cloud. This gives it another attention point. Finally, looking at the picture I can imagine how one could peel away the upper sky layer

PIER

I took this picture under the Pier, a famous tourist attraction by the sea in The Hague. As a matter of fact, this colourful columns are the structure that is the base of the Pier. We can see how this picture is related to Mathematics by looking at the columns: they are all parallel. In Mathematics, parallel lines are lines in a plane which do not meet; they do not intersect at any point because they have the same slope. During math class, we recently covered the topic of simultaneous equations, in which parallel lines are also involved. When we graph a simultaneous equation and we notice that the lines that we make do not intersect, we will find out that those lines are parallel therefore the equation will have no solution. Otherwise, instead of graphing the equation, we could solve the equation by using the method of substitution. We would still get an equation with no solution.

Pont Queensboro

Le Queensboro Bridge, pont en acier, datant de 1909, qui connecte Long Island City au Queens en passant par Roosevelt Island a souvent été immortalisé au cinéma. Pour cause, ce monument emblématique illustre l'ingéniosité mathématique qu'il a fallu affronter pour sa construction. Sa longue et haute structure métallique est constituée d'un enchevêtrement de petits et grands polygones dont on a un aperçu au premier plan. De cet enchevêtrement ordonné de figures géométriques, se dégage une impression de force et de légèreté. Dans cette photo, en cette belle journée ensoleillée, l'image du pont se reflète dans East River, créant une symétrie du pont par rapport à l'axe de la surface de l'eau

Probabilidad en el oceanografico

Probabilidad en el Oceanográfico

La silueta de esta parte del Oceanográfico de Valencia es comparable con la forma de la Campana de Gauss, gráfico de una función mátematica utilizada en estadística usualmente para calcular la distribución de probabilidad.

Problème

Problème

Sur la surface d'un cylindre de rayon 15 cm et d'une hauteur de 13 m, sont positionnés des cônes. 30% de ces cônes ont une base de rayon 2 cm, 40% ont une base de rayon 3 cm et le reste ont une base de 1,5 cm de diamètre. Sachant que cet arbre est originaire d'Afrique et que cette photo a été prise au Jardin Botanique National de Belgique situé à Meise qui imite les conditions de vie de son milieu naturel, calculez combien de litres d'eau consomme chaque année ce Ceiba Insignis et quelle est sa période de floraison. :-)

Proporcion aurea en la naturaleza

Proporción áurea en la naturaleza.

La proporción áurea es la fórmula que egipcios, griegos, romanos y demás civilizaciones avanzadas han venido utilizando como inspiración para las artes o la arquitectura. En resumen, se trata de un patrón basado en un rectángulo, el cual se repite con unas proporciones determinadas hasta el infinito. A su vez, uniendo los vértices opuestos del cuadrado resultante con el arco de 1/4 de círculo, el resultado es una espiral. Este patrón, por increíble que parezca, rige el modo en que se proporciona prácticamente cualquier estructura existente en este universo, desde la cadena de ADN hasta una galaxia entera. El número áureo o de oro representado por la letra griega ϕ (en minúscula) o Φ (en mayúscula), es un número irracional.

PYTHAGORAS

I walked into my room one day and found my ruler at the corner of my desk, forming a right-angled triangle (with the corner of my desk being the right-angle). This was an excellent scenario to photograph and use for the photomath competition.A right-angled triangle's characteristic is that one of its inner angles is 90°. It is said that the Babylonians had already discovered the right-angled triangle 1000 years before Pythagoras established his theory about the relationships between the sides of a right-angled triangle. If the lengths of the sides of a right-angled triangle are all represented by integer numbers, then we may call those numbers a pythagorean triple, and the triangle is called a pythagorean triangle.

Rayons et rayons du soleil

Le vélo avec ses roues de forme ronde et ses « rayons » m’a rappelé le plus connu des symboles mathématiques : la constante d’Archimède, la lettre π. Constante liée à tout élément rond. Au second plan, les lumières rasantes des rayons du soleil passent derrière les rayons du vélo

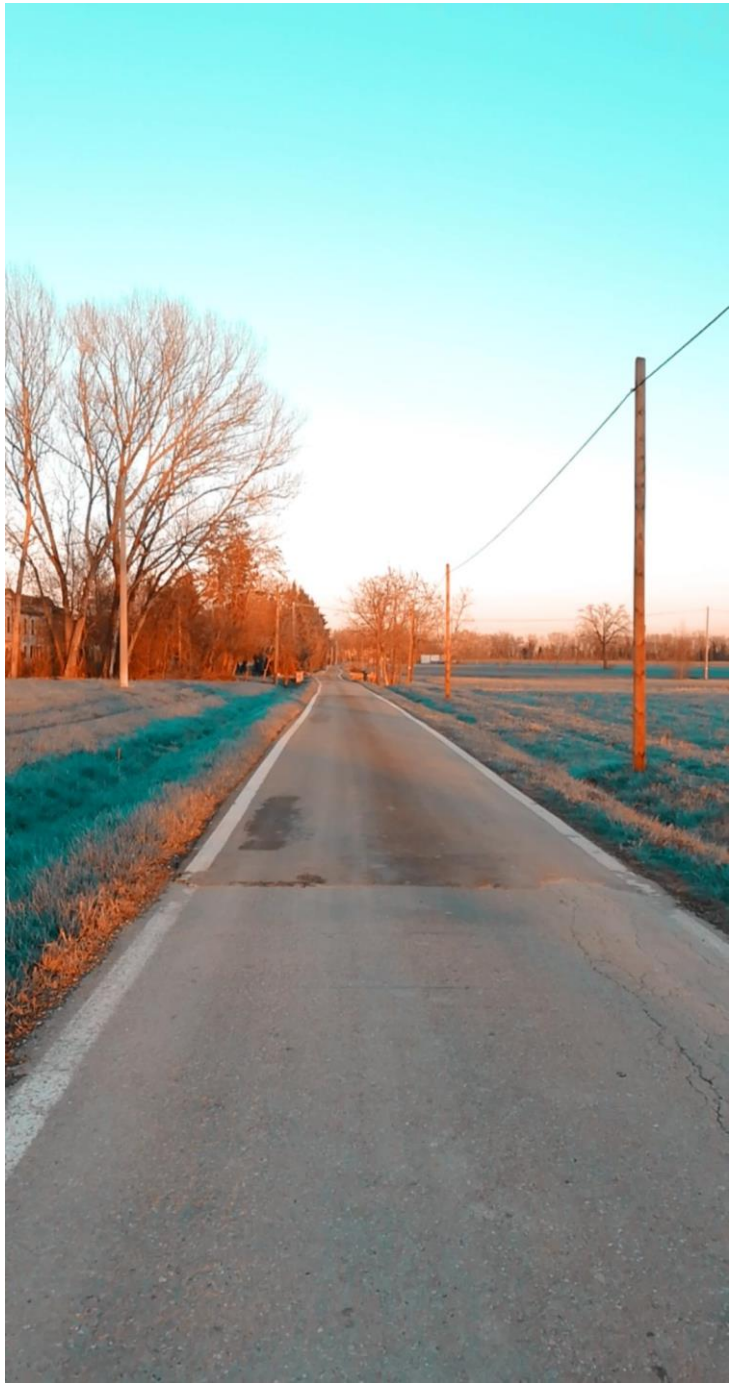
Reflejo infinito

El hecho de que haya un espejo en frente de otro crea una imagen infinita

Romanesco

Romanesco

Romanesco broccoli is a perfect example of a natural fractal. To be more precise, romanesco spirals are perfect examples of the fractals following the Fibonacci sequence. According to Cambridge dictionary a fractal is “a complicated pattern in mathematics built from simple repeated shapes that are reduced in size every time they are repeated.” This can clearly be seen in romanesco broccoli, making it a perfect example for mathematics in nature.



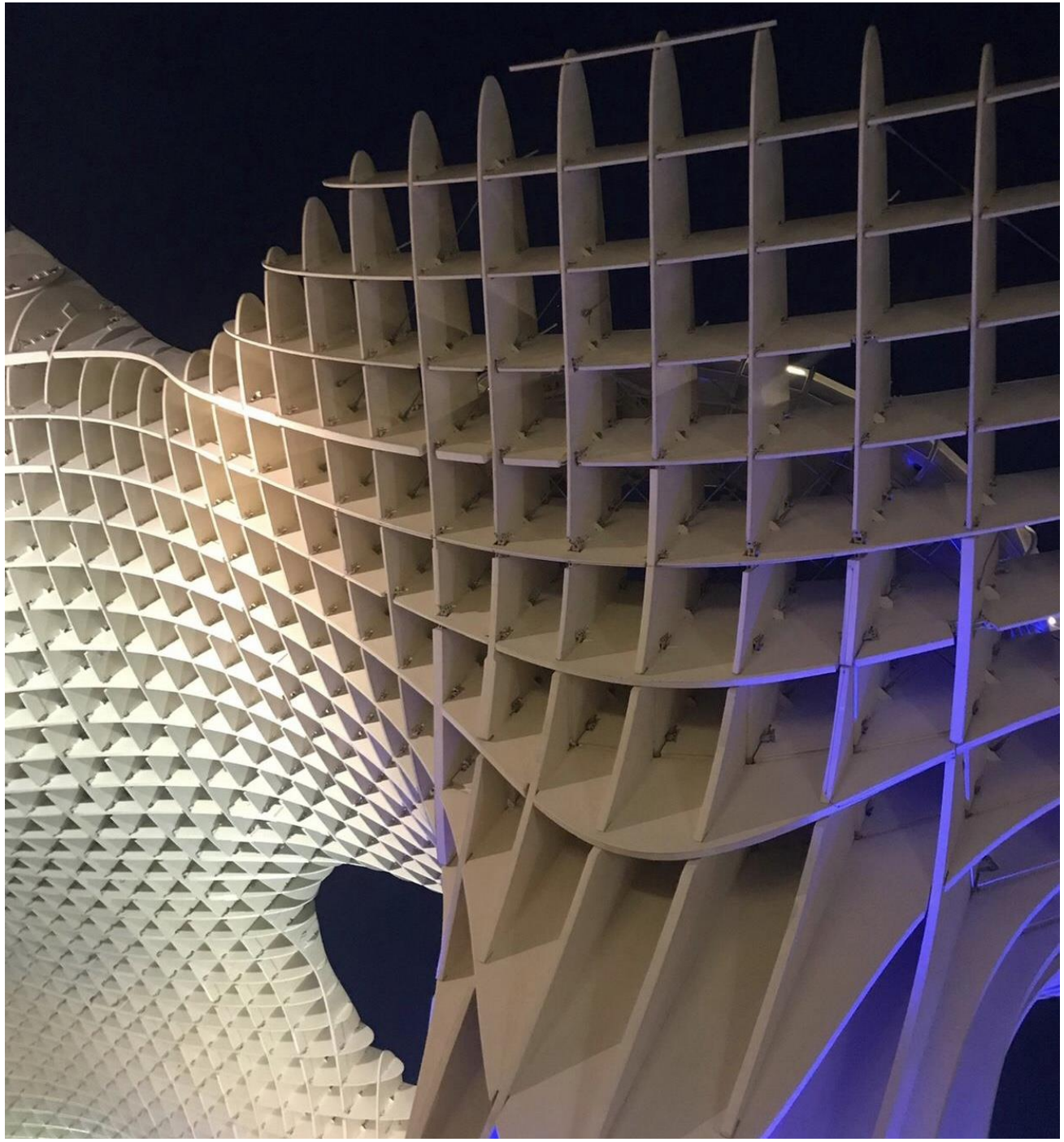
Route Infinie

Cette photo me ramène aux maths car cette route entourée de végétation semble infinie. Elle semble ne jamais s’arrêter dans ce paysage aux couleurs bleu-orangées.Les couleurs du coucher de soleil ont changé le paysage et ont transformé l'image, en lui donnant un air surréaliste

Serpentins

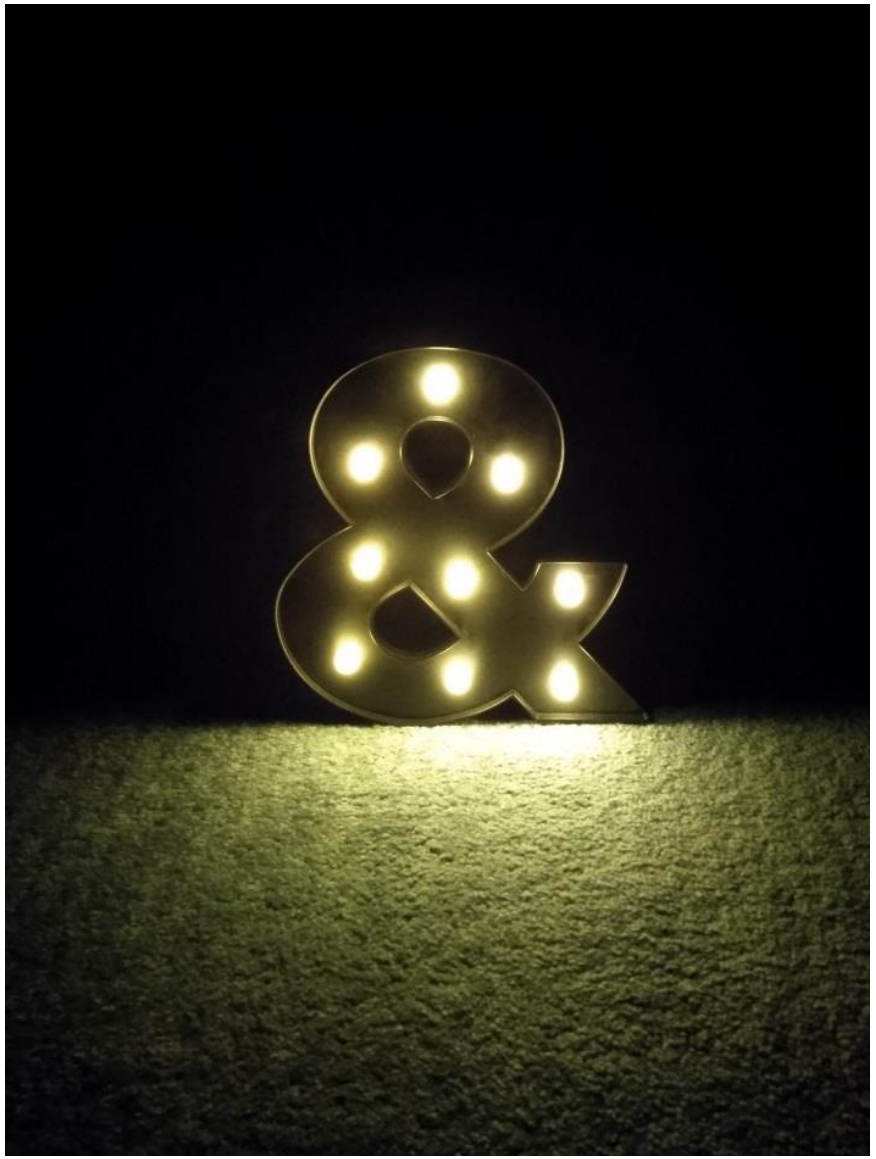
Serpentins

Cette image me fait penser à l’escargot de Pythagore, le fait qu’elle soit en noir et blanc amplifié l’effet de profondeur. Toutes les photos ont été prises au sein de l'école européenne de Bruxelles 4, le concours étant pour l'école j'ai voulu faire les photos uniquement dans son enceinte.



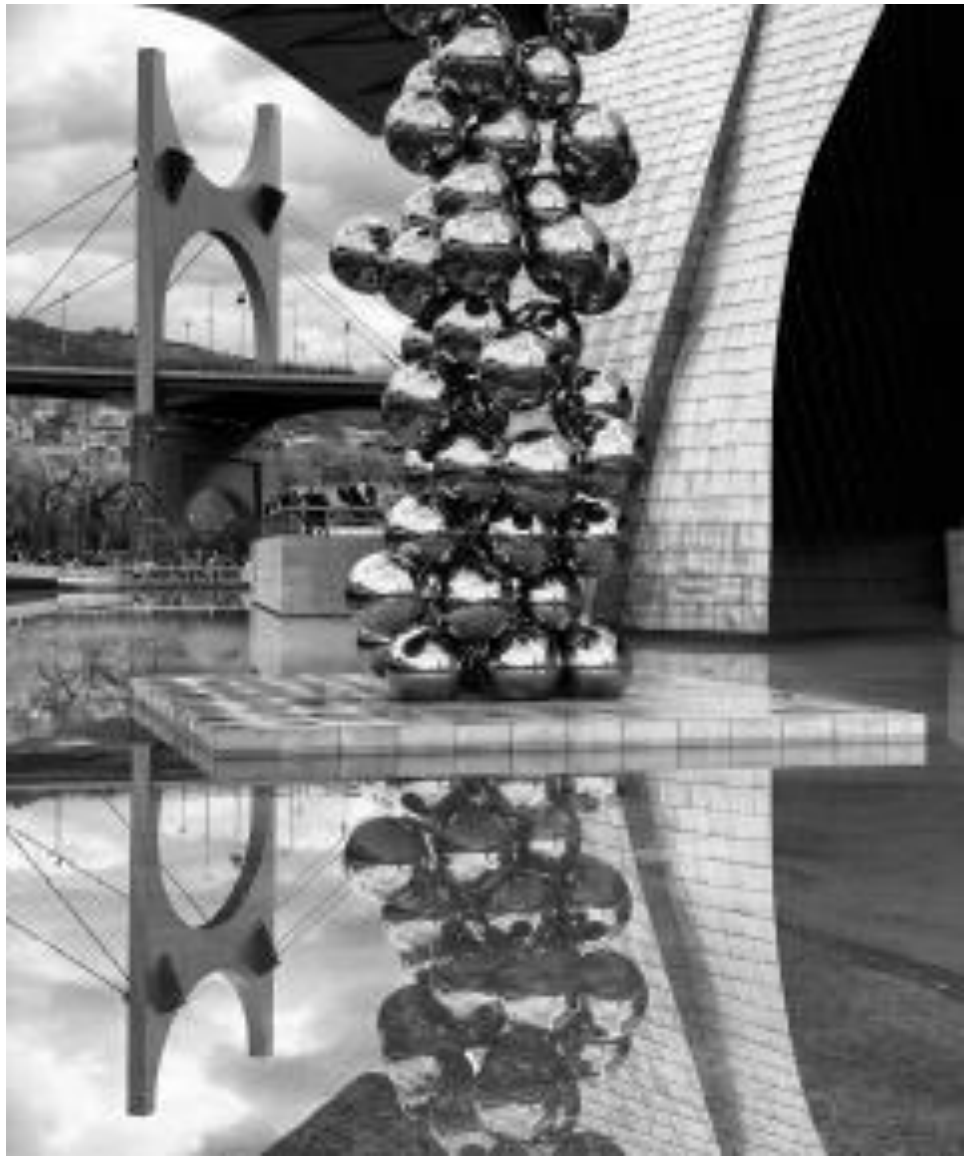
Setas de Sevilla

Setas de Sevilla: Esta foto fue tomada en las Setas de Sevilla. Es una escultura muy famosa que tiene una forma geométrica de Seta.



Símbolo

Símbolo



Simetría desordenada

Simetría desordenada

Simetría desordenada: Ver los reflejos de tantas figuras geométricas y el puente de La Salve en el agua que rodea parte del Museo Guggenhein es indescriptible. La obra principal está compuesta por ochenta esferas de acero inoxidable reflectante, colocadas de forma prácticamente aleatoria sobre tres ejes y que conforman un equilibrio sorprendente.

Simetría en cartabón

Simetría en cartabón

Simetría en cartabón: En esta fotografía podemos ver un cartabón caracterizado por su traslucidez verde. Por causa de la luz este crea una sombra simétrica en la mesa

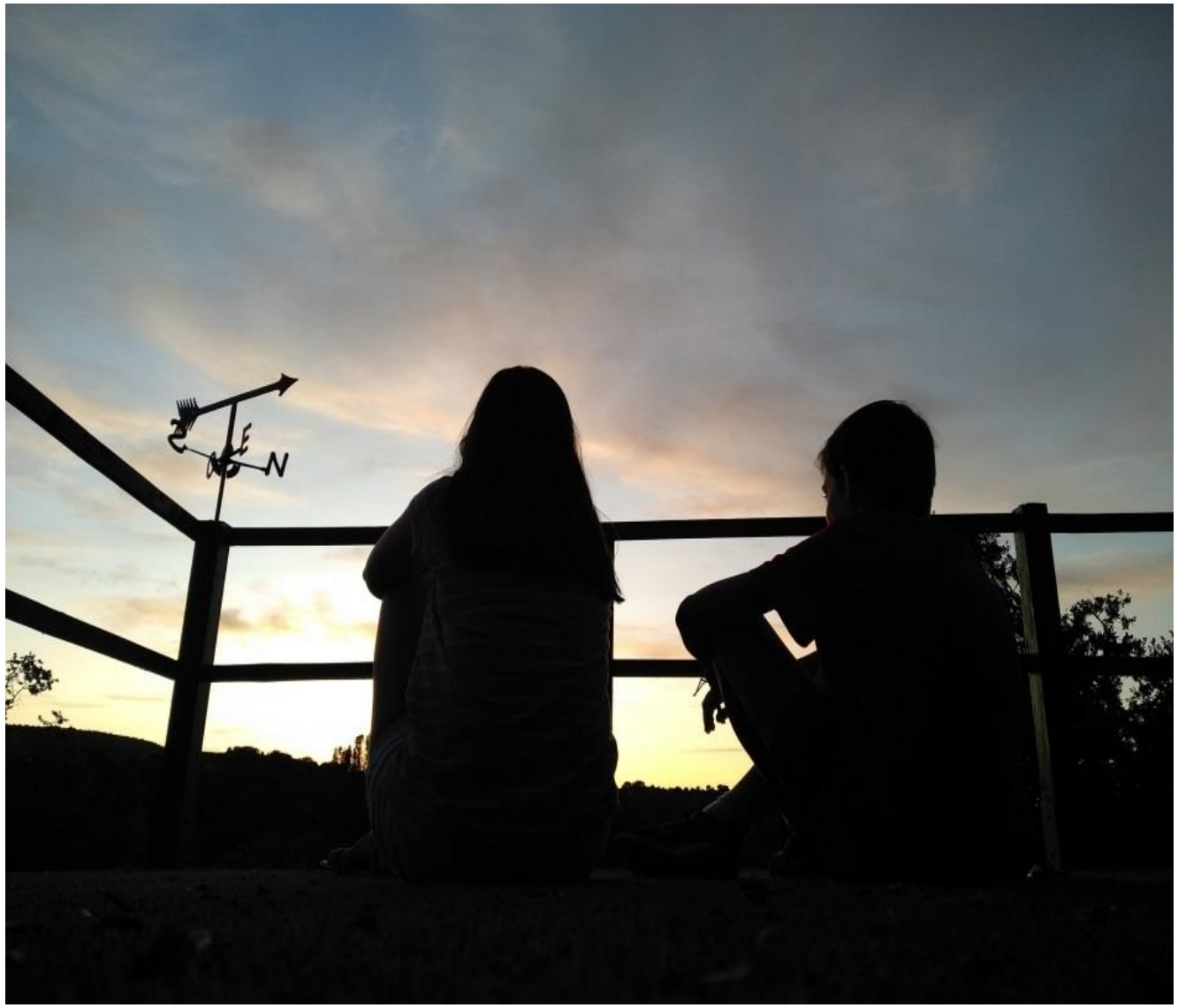
Simetría nevada

Simetría nevada

Simetría nevada: En esta fotografía se puede apreciar la simetría, ángulos agudos, una figura central con forma rectangular y dos circunferencias. Se trata de una bola de nieve.

SNAIL

This photo is one of a snail shell I found. It has a nice spiral shape. The snail gets born with this shell and builds on with it. It does this for structural support and so it doesn’t grow out of its shell every few months. It can partly be an example for the golden ratio in nature but the shell doesn’t get 1.61803398875 times bigger every 90 degrees.



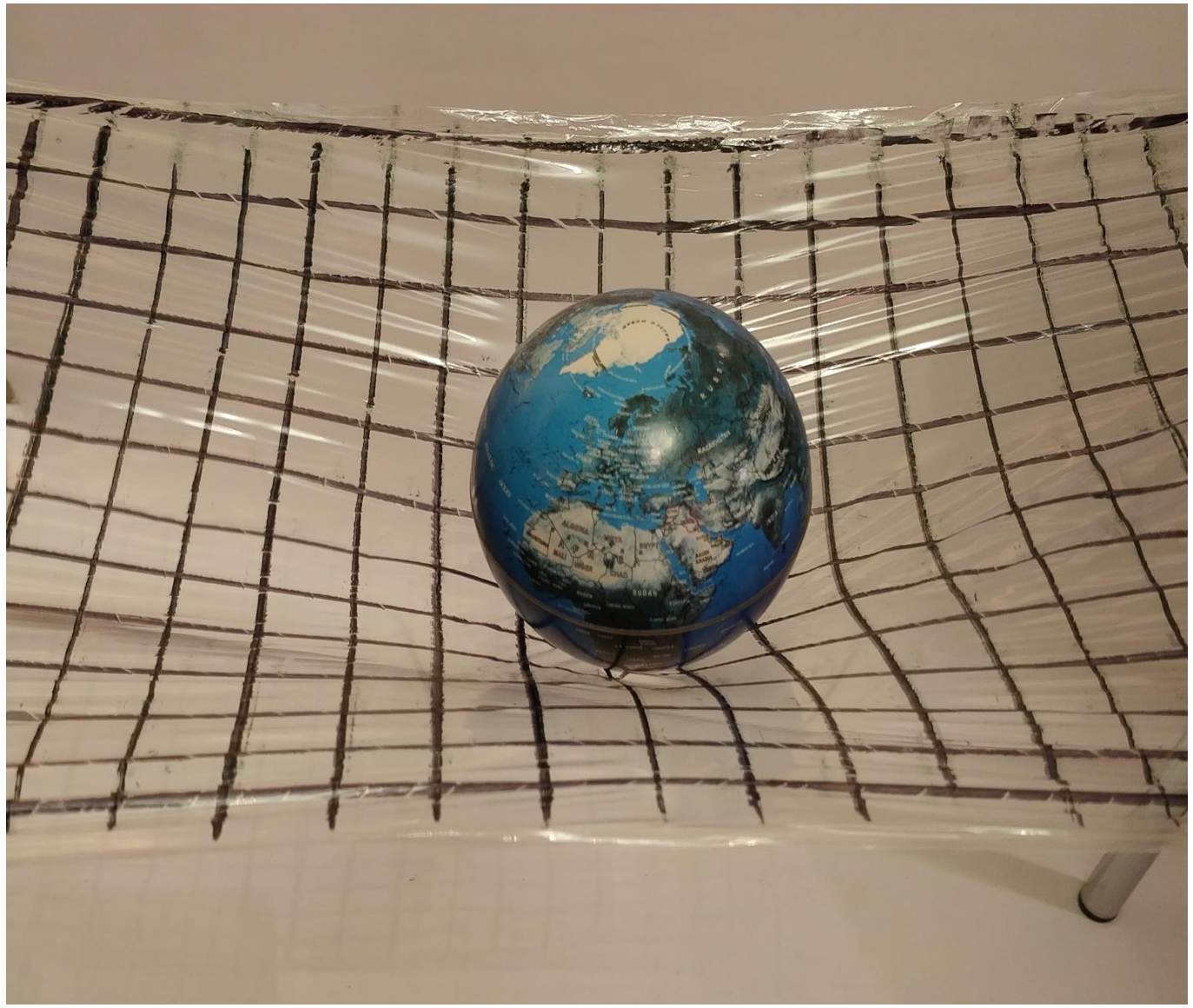
Sombra

Sombra

SOSlaTerre

SOS la Terre

Concentrés sur la même surface, lignes, triangles, trapèzes, polygones, plus ou moins réguliers, se combinent parfaitement, se soumettant à un pouvoir inévitable de la nature : la sécheresse. C’est la surface de la Terre, transformée par le manque d’eau en paysage apocalyptique. L’harmonie est brisée par les traces des êtres qui sont parfois la cause du déséquilibre climatique : les humains.



Sphere-3D

Sphere-3D

This picture was made with cling foil and a grid of squares drawn on it, it was then warped by the force of the model planet, the closest squares became visibly stretched. This demonstrates the curvature 4 dimensional spacetime experiences due to masses like the earth as described in the general theory relativity.

Spherical symmetry

Spherical symmetry

Stereotypically when we think about math we think about numbers and shapes as we are though in school. Math to me is a lot wider than this. Math makes up the universe when we look at buildings, they are perfectly calculated to withstand the force of the heavy materials and perfectly fit in the space they are placed. Technology also strongly consists of mathematics to program them. There are several other examples that you would even expect to contain math. For my photo math I wanted to focus on symmetry and architecture. When I was staying in this beautiful hotel in the center of Berlin, I came across this beautiful wall architecture that framed the corridor it immediately stuck out and so I took a picture. I thought it perfectly represented math as it shows several shapes and how perfectly calculated this wall structure was to make it perfectly symmetrical

STAIRS

This photo was taken at my best friend's house. The first thing I noticed was the three lines parallel in the left. Then I looked at the part of the right which, as you can see, is much more complex and difficult to describe. At the beginning you can see two parallel lines but if you look in a more detailed way, you can notice that in these two parallel lines that are cut by a transversal as shown in the image, that there are internal alternate angles, corresponding angles, vertical angles and consecutive interior angles.

STRENGTH

Strength

A column is an upright pillar, in this case cylindrical. Because the ground and the ceiling are parallel, the columns between them are all parallel too to each other and of the same lengths. The shadow forms two triangles on the wall in the back- one in light and one in dark. The angle situated in the center left of the image is circa a 30° angle which gets wider and opens up perfectly to the nature, this perfect line is the main focus of the picture.

SYMMETRY IN TIME

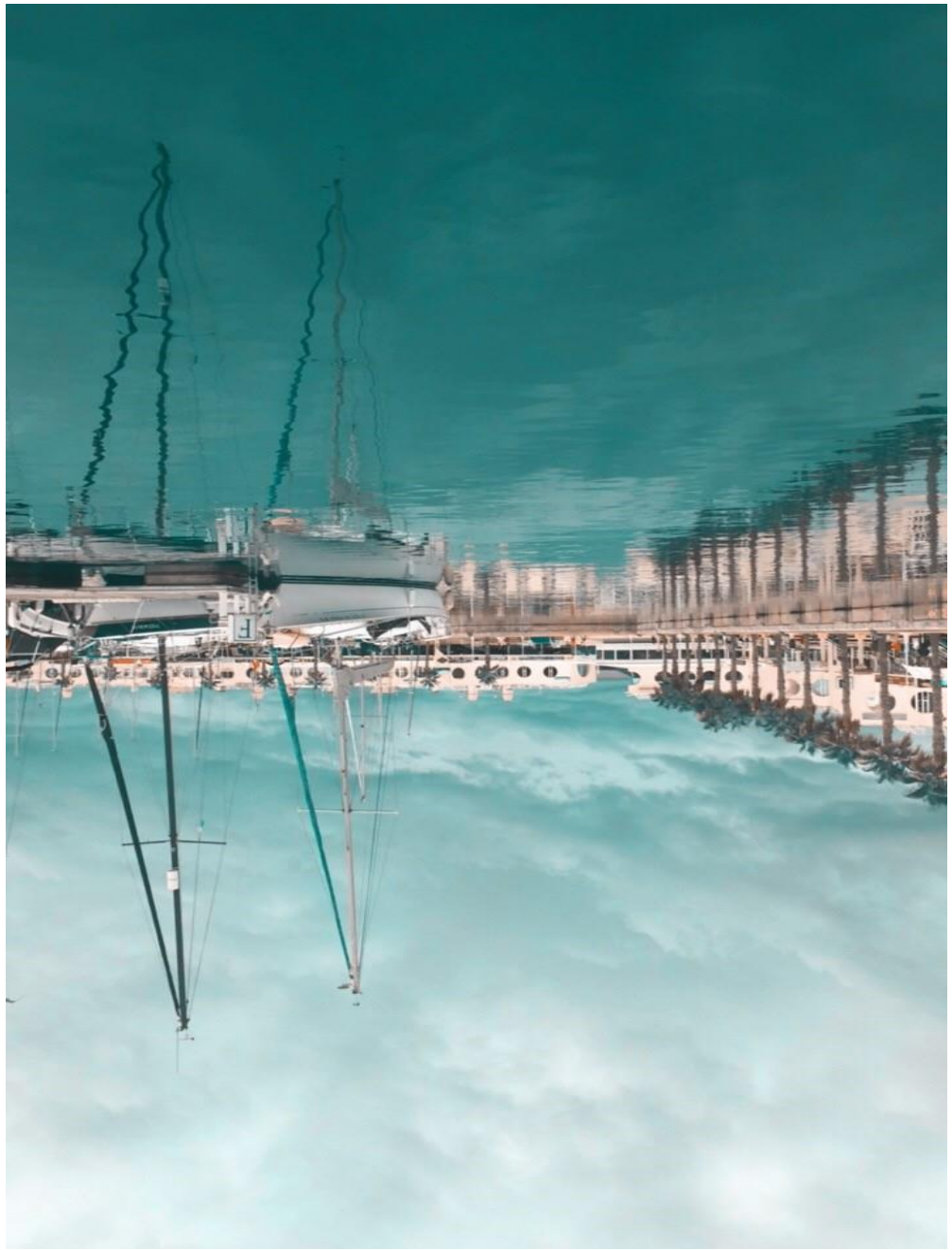
Time, clocks and watches astonishingly have many forms of math within them. Clock hands have angles between them, creating many different types of angles, digital watches have many forms of symmetry within them. Although the picture isn't extremely high quality, but if we put the line of symmetry between the two dots in the central of the clock, the numbers on the two sides will be perfectly symmetrical. I believe that there are more cases of symmetry within a digital watch, in this case I chose 22:55.

The Circle of Knowledge

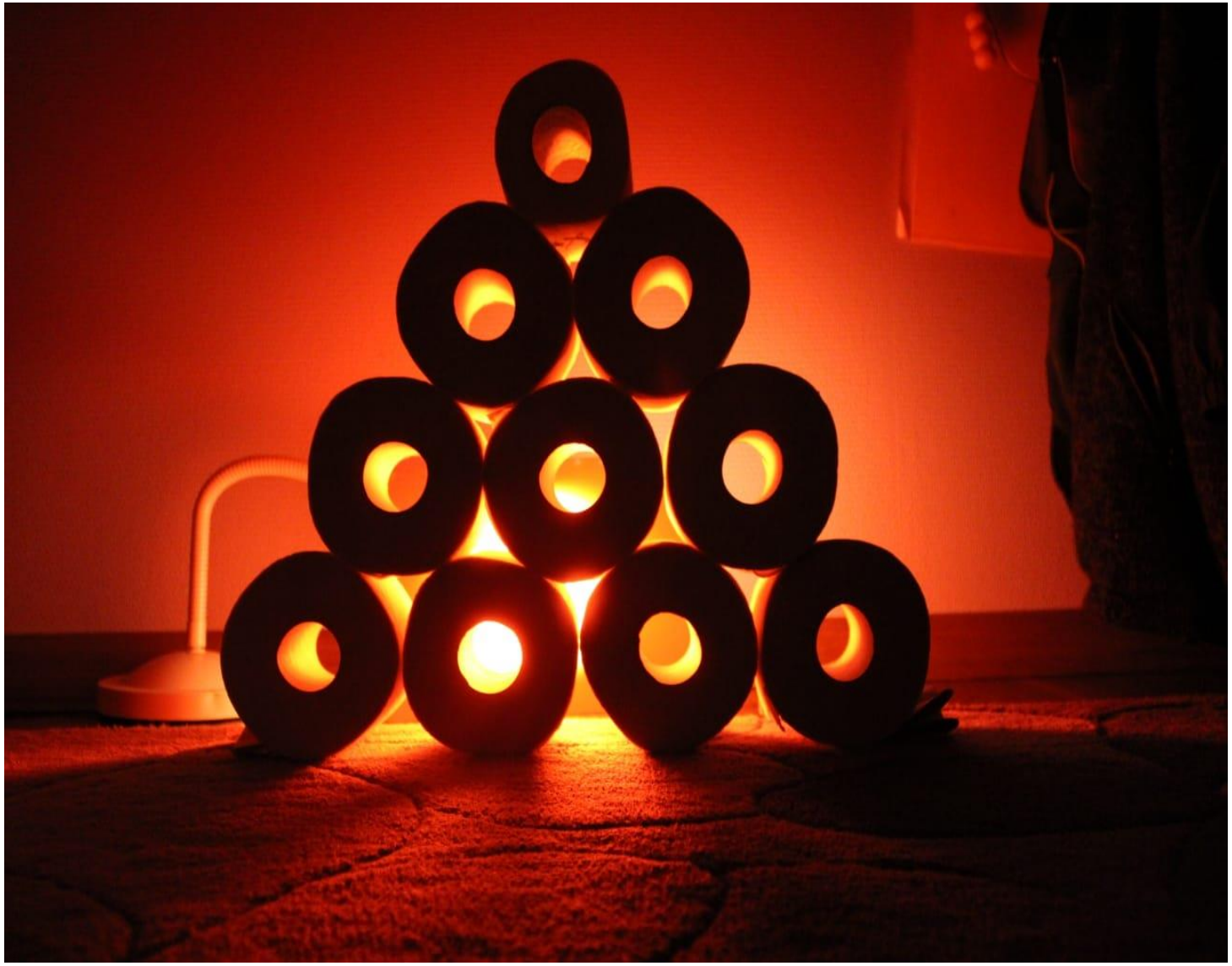
The circle of knowledge

The Light in the distance

This photo simply shows many lit candles in a row in the distance. The mathematical side of the photograph is the shape that the candles have; round, a circle. The name of this piece is “the light in the distance”. This title seems ironic, because there are light all the way along into the distance, but what I mean by this is that the light is always there. “The light in the distance” is a title close to the quote “the light at the end of the tunnel” used for when in a bad situation. Here, “the light in the distance” is meant by there is always light; hope. Even when in a bad situation, there is always light. There is always a way



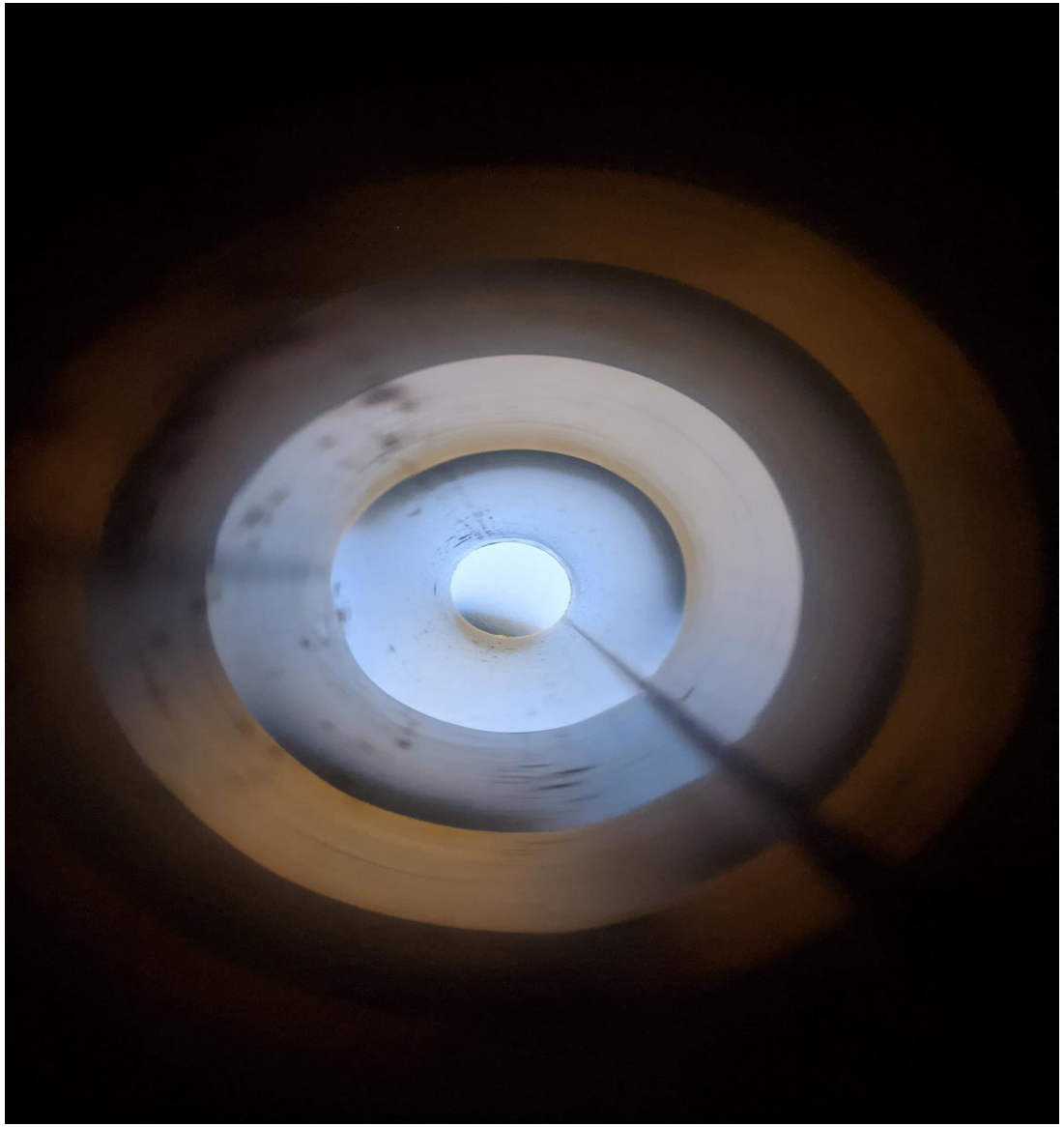
The upside down:
El puerto de Alicante, tan cercano y tan ajeno puede llegar a ser. La reflexión que puede llegar a darnos impresión de un mundo paralelo



Triángulo de Pascal

Triángulo de Pascal

El título de mi foto se asocia a las filas del triángulo y son comparables a los números de las filas del triángulo de Pascal.



Tubular

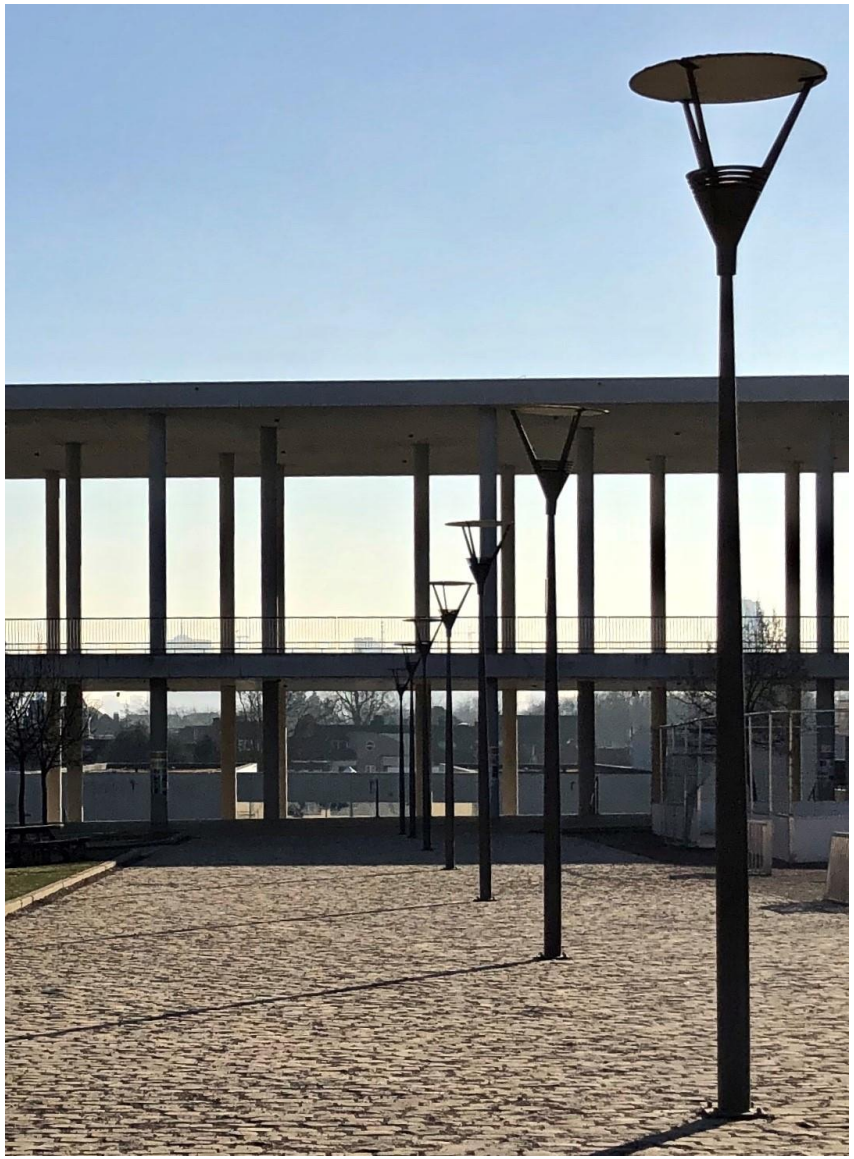
Tubular

Tubes essentially are long cylinders, a body defined by the laws of geometry. Looking inside such a tube it can be observed that the incident light causes gradational circular reflection. Again, a shape interrelated with Maths. Furthermore, Tubes, just like the mathematical world, are most of the time unseen (for example tubes carrying gas behind the walls of our buildings) and yet something of a major importance to us humans (two similar kind of networks).

Última parada Estación de trenes paralelos

Última parada:
Estación de trenes
paralelos

Las teclas del piano están dispuestas de forma paralela. Así, parece que las de color negro sean trenes que se encuentran en la última parada. Al final parece ser que las matemáticas si tienen algo que ver con la música.



UNRELIABLE

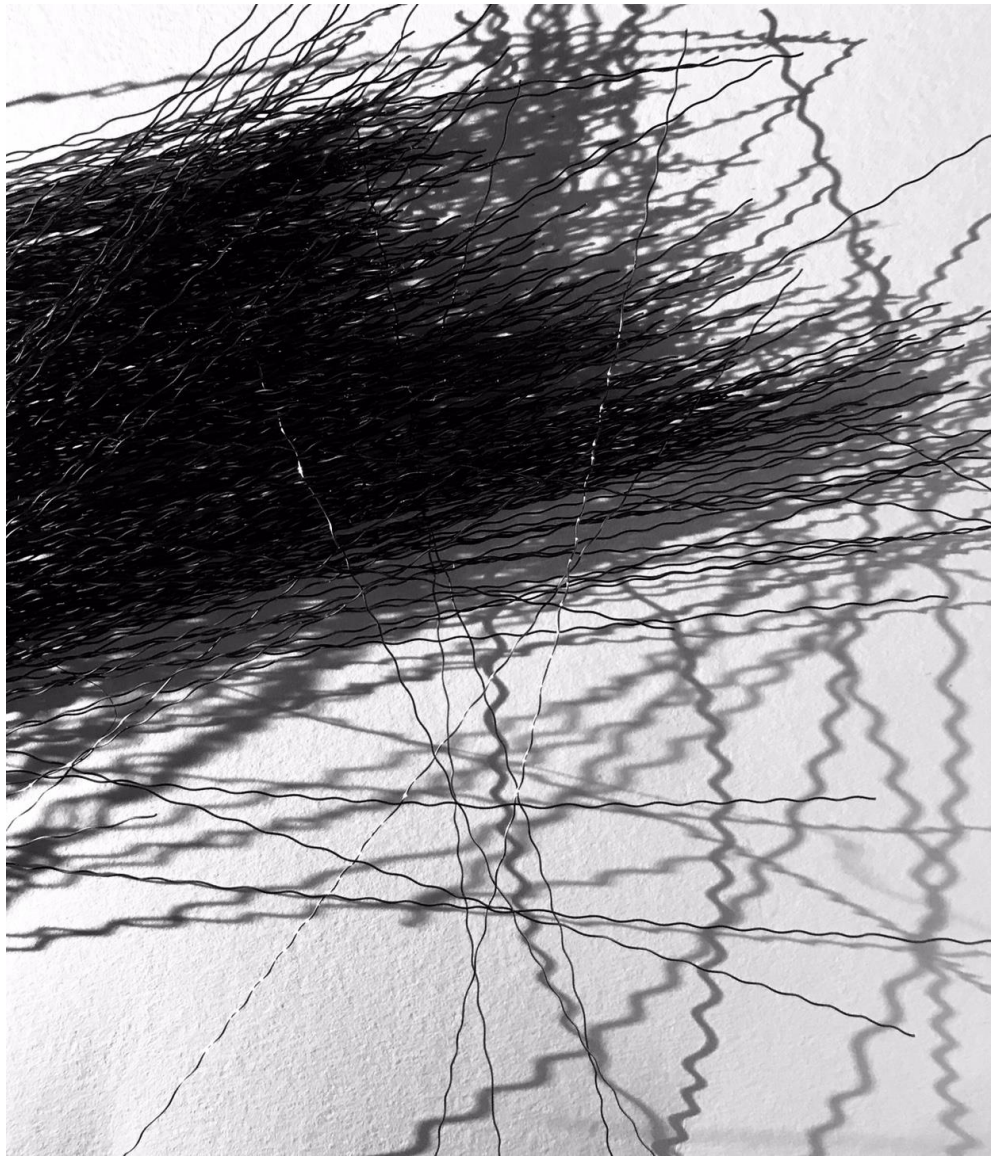
Unreliable

The lamps in a straight line seem to get smaller in distance but it is only because of the perspective of the photo. The lamps are also parallel with the pillars that support the background structure which is covered in shadow.

Venetian Windows

Venetian Windows

Inside the courtyard of a block of apartments in Venice, Italy. Looking up into the corner are the parallel rows of windows with shutters open or closed, laundry on the washing line, flowers in troughs and aged paint beginning to wash away. The crevice between the apartments is perfectly centred, giving a line of symmetry and creating a calm balanced feel. Overall the picture is very warm-toned, the main colour being the yellow ochre exterior of the apartments.



Wired up

Wire up

My photography ‘wired up’ are some wires I found in the back of a cupboard in my art class. I was looking for inspiration and I then came across these little wires. These remined me of multiple things within math's but also in real life. These wires for me, represent different people and how they are different. Some horizontal, some vertical, some high, others low and some who don’t really fit in but, looking at the whole picture, actually do fit in. The name ‘wired up’ symbolizes how mathematics is in a sense wired up and the same goes for people.

x2 a la romana

X al cuadrado a la romana

La foto es de uno de los arcos que miran hacia el interior del Coliseo Romano. Los arcos típicos de la arquitectura romana que muestra esta foto son muy parecidos a la parábola con ramas hacia abajo.