Materiais Pedagógicos
Estudos do Papel

Exercícios e exemplos de trabalhos
Recolha para uso em contexto letivo

2023 2024
Nuno Fragata Marques

IPL
escola superior
de artes e design
instituto politécnico
de leiria

Exemplo de Materiais Pedagógicos e de Extensão da Atividade Letiva

Estudos do Papel | Paper Studies

Mestrado em Design Gráfico

Nuno Fragata Marques | S2 | 2023/2024

→ **Papel**
História breve
Caraterísticas

Ferramentas e materiais

→ **Recortes**
Bidimensionalidade e leitura
Composição e leitura
Planificação e recorte

→ **Pop-ups**/ Engenharia do papel
Tridimensionalidade
Regras, estruturas e formas

Animar o objeto/ Criar movimento

→ **Ilustração volumétrica** com papel
Geometria do objeto
Planificação e execução
Fotografar o objeto

Paper
Brief history
Characteristics

Tools and materials

Cutouts
Two-dimensionality and reading
Composition and reading
Planning and clipping

Pop-ups / Paper engineering
Three-dimensionality
Rules, structures and forms

Animate the object / Creating movement

Volumetric illustration with paper
Object geometry
Planning and execution
Photographing the object

Papel
História
Caraterísticas

Ferramentas e materiais

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Composição e leitura
Planificação e recorte

Pop-ups/ Engenharia do papel
Tridimensionalidade
Regras, estruturas e formas

Animar o objeto/ Movimento

Ilustração volumétrica com papel
Geometria do objeto
Planificação e execução
Fotografar o objeto

. Pensar aplicações do papel
. Pensar o papel como corpo de um objeto gráfico
. Pensar o papel como base para impressão, vincagem e corte
. Pensar o papel como expressividade autónoma
. Pensar o papel como tendo caraterísticas próprias

. Thinking of the applications of paper
. Thinking of paper as the body of a graphic object
. Thinking of paper as the basis for printing, creasing and cutting
. Thinking of paper as autonomous expressiveness
. Thinking of paper as having its own characteristics

Papel
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Tridimensionalidade
Regras, estruturas e formas

Animar o objeto/ Movimento

Ilustração volumétrica com papel
Geometria do objeto
Planificação e execução
Fotografar o objeto

Narrative in the visuals of the graphic object

Narrativa no grafismo do objeto gráfico

. Pensar aplicações do papel
. Pensar o papel como corpo de um objeto gráfico
. Pensar o papel como base para impressão
. Pensar o papel como expressividade autónoma
. Pensar o papel como tendo caraterísticas próprias

Narrativa no manuseamento do objeto gráfico

Narrative in handling the graphic object

Papel
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Ferramentas e materiais

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Pop-ups/ Engenharia do papel
Tridimensionalidade
Regras, estruturas e formas

Animar o objeto/ Movimento

Ilustração volumétrica com papel
Geometria do objeto
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Narrativa no grafismo do objeto gráfico

. Pensar aplicações do papel
. Pensar o papel como corpo de um objeto gráfico
. Pensar o papel como base para impressão
. Pensar o papel como expressividade autónoma
. Pensar o papel como tendo caraterísticas próprias

Narrativa no manuseamento do objeto gráfico

2 EXERCÍCIOS | Exercises

I- Bidimensionalidade > Tridimensionalidade/ Pop-up (Objeto físico manuseável)

I- Two-dimensionality > Three-dimensionality/ Pop-up (Manipulable physical object)p-up

II- Volumetria > Imagem plana (Poster)

II- Volumetry > Planar image (Poster)

Exercícios de experimentação livre mas orientada, em diálogo com o docente

Exercises of free but guided experimentation, in dialogue with the teacher

Papel
História
Caraterísticas

Paper
History
Characteristics

Ferramentas e materiais

Tools and materials

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Composição e leitura
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Cutouts
Two-dimensionality and reading
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Pop-ups/ Engenharia do papel
Tridimensionalidade
Regras, estruturas e formas

Pop-ups / Paper engineering
Three-dimensionality
Rules, structures and forms

Animar o objeto/ Movimento

Animate the object / Movement

Ilustração volumétrica com papel
Geometria do objeto
Planificação e execução
Fotografar o objeto

Volumetric illustration with paper
Object geometry
Planning and execution
Photograph the object

2 EXERCÍCIOS | Exercises

I- Objeto físico manuseável

Leporello criado por recortes e pop-ups

I- Manipulable physical object

Leporello created by cut-outs and pop-ups

II- Poster

Motion poster

II- Poster

Motion poster

1 WORKSHOP | Workshop

Imagem tátil | Tactile image

2 EXERCÍCIOS | Exercises

Duração: 3 aulas para cada exercício
Duration: 3 classes for each exercise

I- ONE4ALL & ALL4ONE

. Objeto físico manuseável

Leporello criado por recortes e pop-ups

I- Manipulable physical object

Leporello created by cut-outs and pop-ups



Laura Barrett

+



Jacob Grimm

+



MHT PopUp

II- MINI ME/I AM A GIANT

. Poster

Motion poster

II- Poster

Motion poster created as photography, with the use of cut-outs and tridimensional paper object



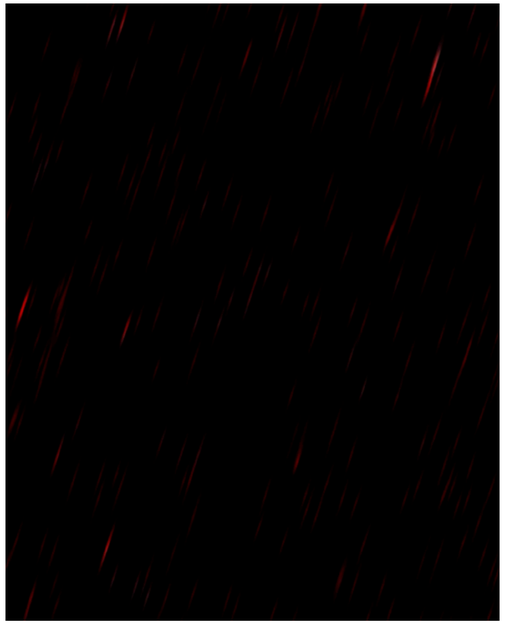
Shutterstock

+



Eugenia Zoloto

+



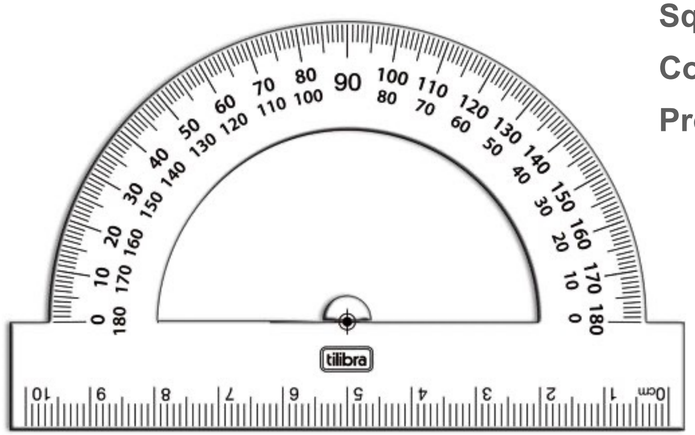
Matt Reeves



Materiais | Materials



Papel/ Cartolina
Papel vegetal
Tesoura
Cola
Fita-cola
X-ato
Lápis/ Lapiseira
Vincador (pode ser uma caneta do tipo ball-point sem tinta) ou um vincador de osso
Régua de metal
Borracha
Tapete para corte
Esquadro
Compasso
Transferidor



Paper / Cardboard
Vegetal paper
Scissors
Glue
Adhesive tape
X-ato
Pencil / Pencil
Creaser (can be a ball-point pen without ink) or a bone creaser
Metal ruler
Eraser
Cutting mat
Square
Compass
Protractor

Exemplos | Examples

O que pretendemos explorar | What we intend to explore





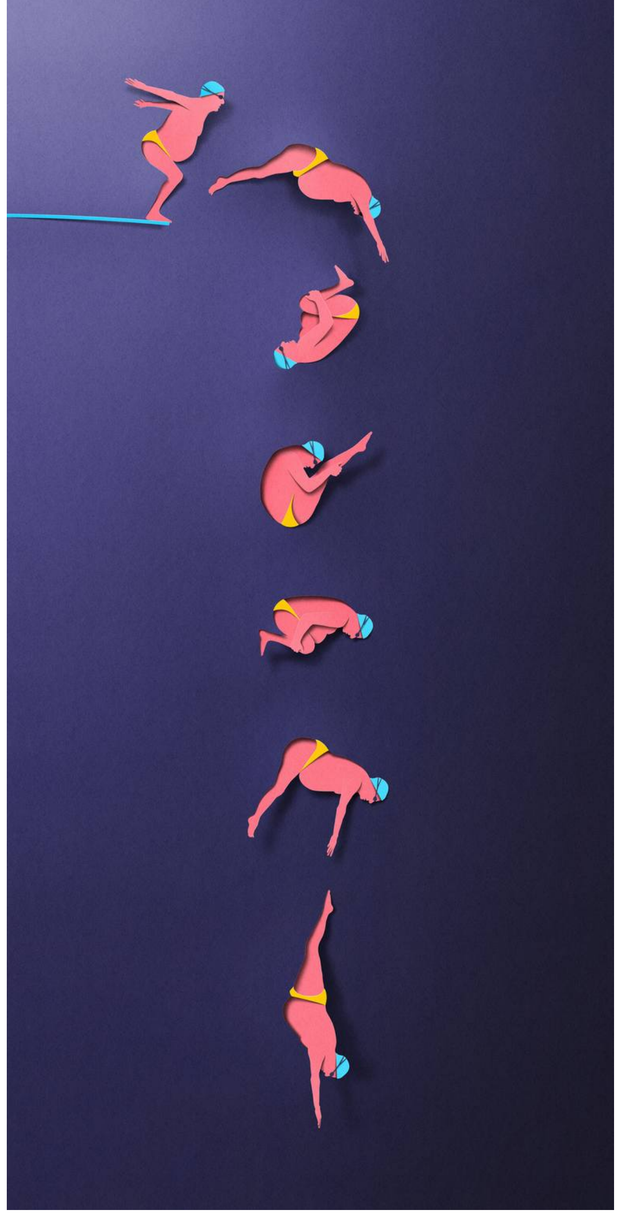
Elsa Mora, Gift card for MoMA, 5″ x 7″, 2015







Eiko Ojala, Hunger for love for Eesti Ekspress, s.d.



Eiko Ojala, Endless summer, 40 x 20 cm, s.d.





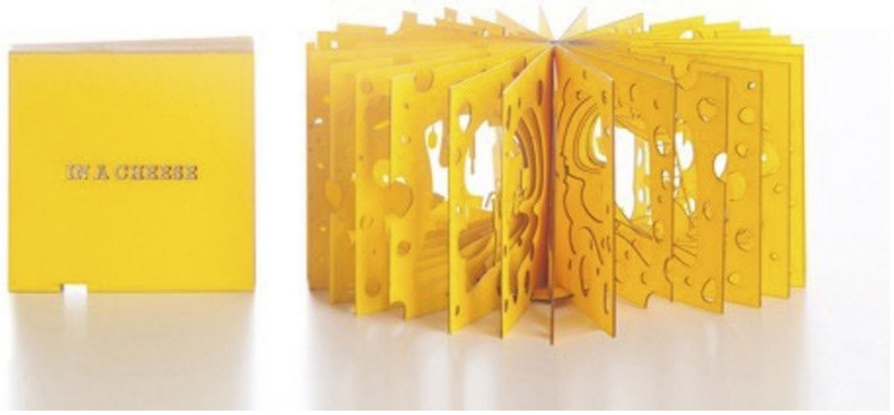
Lucila Biscione, Window decoration in Berlin, 3 x 2.50 m, s.d.



Andrea Dezsö, Intergalactic Gardens, Tunnel book, 2016



Andrea Dezsö, Ancestor's Garden, Tunnel book, 2013 - 2015







Yusuke Oono, Mice in Swiss cheese, 360º book, 10 x10 cm, s.d.





Rocio Fernández Fuks, Collage Desirable Things, s.d.





Lo Siento Studio, Paper meets typography, 2016



OPINION

BY VANESSA BARBARA

The editor of the literary website A Hortaliça and a contributing opinion writer.

Can Brazil pull off the Games with only weeks to go?

RIO DE JANEIRO

IT'S official: The Olympic Games in Rio are an unnatural disaster.

On June 17, fewer than 50 days before the start of the Games, the state of Rio de Janeiro declared a "state of public calamity." A financial crisis is preventing the state from honoring its commitments to the Olympic and Paralympic Games, the governor said. That crisis is so severe, he said, it could eventually bring about "a total collapse in public security, health, education, mobility and environmental management." The authorities are now authorized to ration essential public services and the state is eligible for emergency funds from the federal government.

Measures like these are usually taken for an earthquake or a flood. But the Olympics are a man-made, foreseeable, preventable catastrophe.

I went to Rio recently to see how preparations for the Games are going. Spoiler: not well. The city is a huge construction site. Bricks and pipes are piled everywhere; a few workers lazily push wheelbarrows as if the Games were scheduled for 2017. Nobody knows what the construction sites will become, not even the people working on them: "It's for the Olympics" was the unanimous reply, followed by speculation about "tents for the judging panels of volleyball or soccer, I guess."

I asked the Rio 2016 press office for a tour, but it olympically ignored me. Almost all venues are still un-

Continued on Page 4

EIKO OJALA

Eiko Ojala, Editorial Illustration, 2016



Eiko Ojala, Animated Ilustration, 2016



Kara Walker, Girl meets girl, 29,9 x 40,2 cm, s.d.



Kara Walker, *The Katastwóf Karavan (maquette)*, 2017. Painted laser-cut stainless steel.

Por fim | Last but not least

Olha para ti | Look at you

Do que gostas? O que olhas? | What do you like? What do you look at?



Non-Format, *Hope & Joy — Typographic illustrations, TOPYS, 2018*

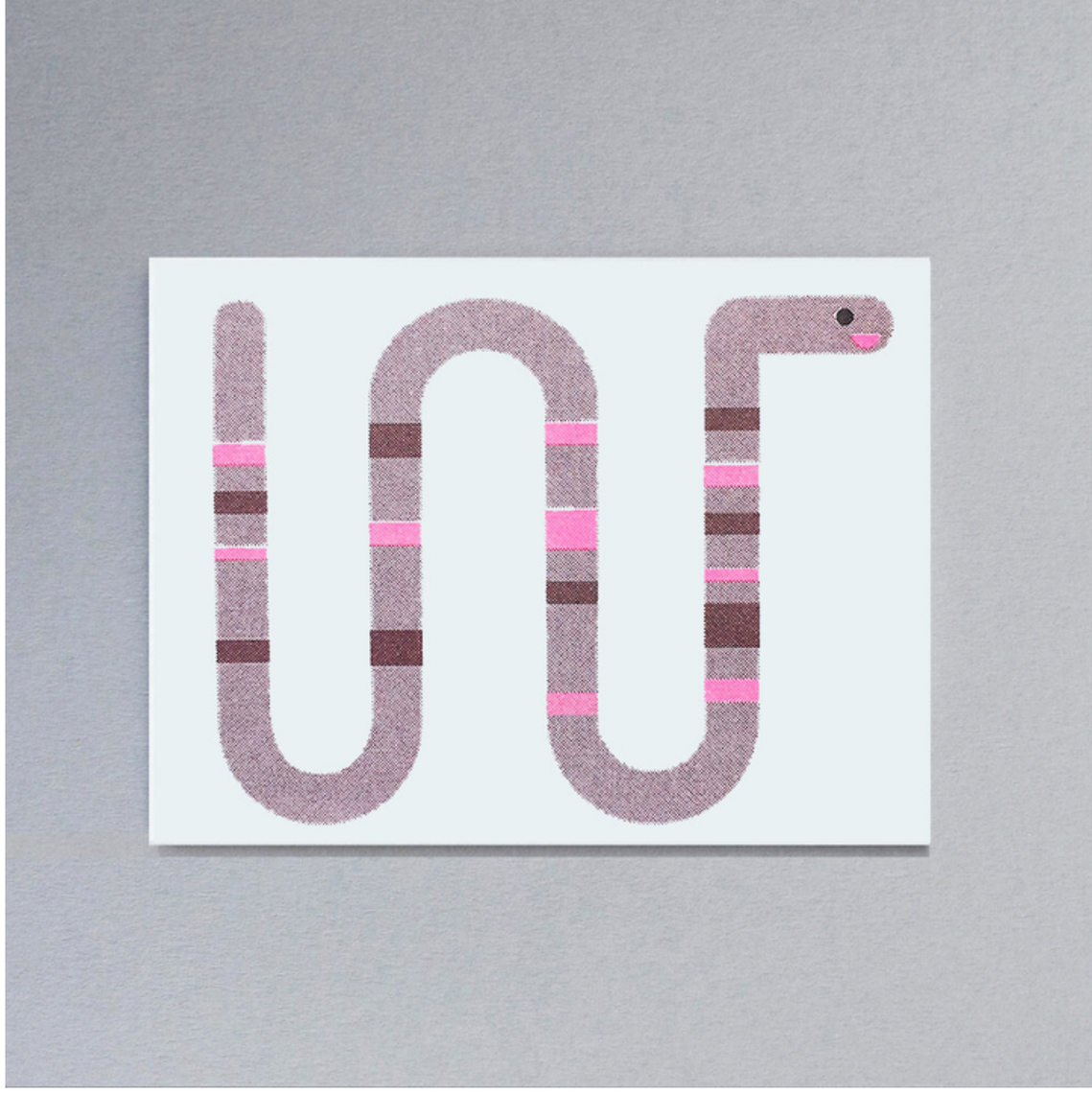




Snas, *poster for Slanted Magazine's 34th issue about the crisis in Europe, s.d.*



Pencil card, risograph, 80x104mm*, s.d.*



Earthworm card, printed, *104x80mm, s.d.*





Hey Studio, La creatividad al principio, Cruz Roja, 2016

Para reflexão | To think about

Desafio

I- ONE4ALL & ALL4ONE

- What do you want to explore? What narrative? What single image that becomes 4 images? Where will you add pop-ups? Why? How?

II- MINI ME/I AM A GIANT

- What do you want to explore? What physical object will be recreated as paper in 3D? How will you add paper cutouts to the image/character? What movement will you add? Why?

nuno.marques@ipleiria.pt

Estudos do Papel | Paper Studies

Mestrado em Design Gráfico - Apresentação 02 | Presentation 02

Nuno Fragata Marques | S2 | 2023/2024

Para reflexão | To think about

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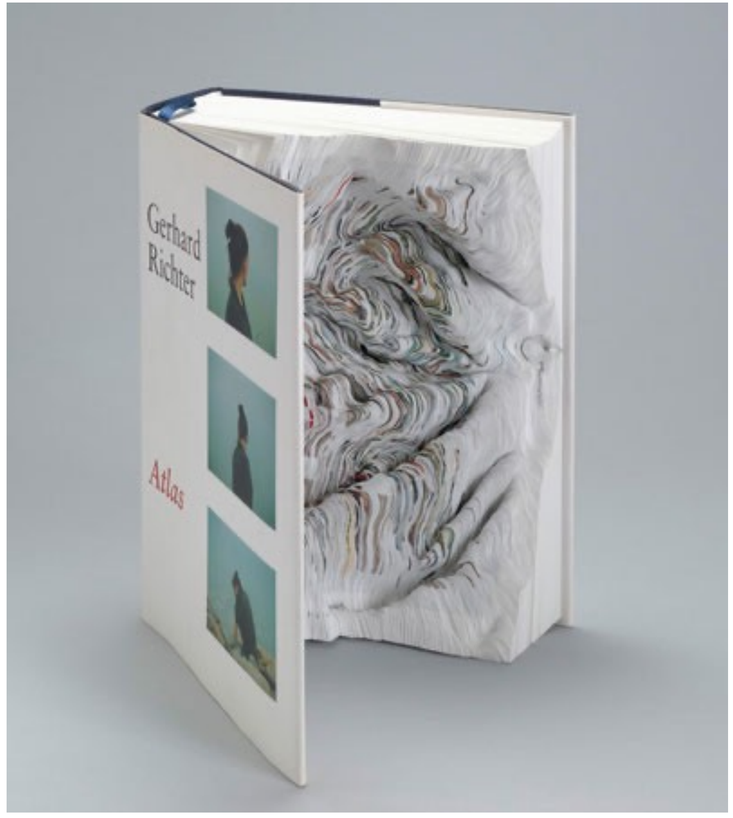
Exercise 1: Inspiration/Possibilities




Gerhard
Richter
Atlas


EGON SCHIELE
PHAIDON


Male Nude with a Red Loincloth

Noriko Ambe

Inspiration / Some possibilities





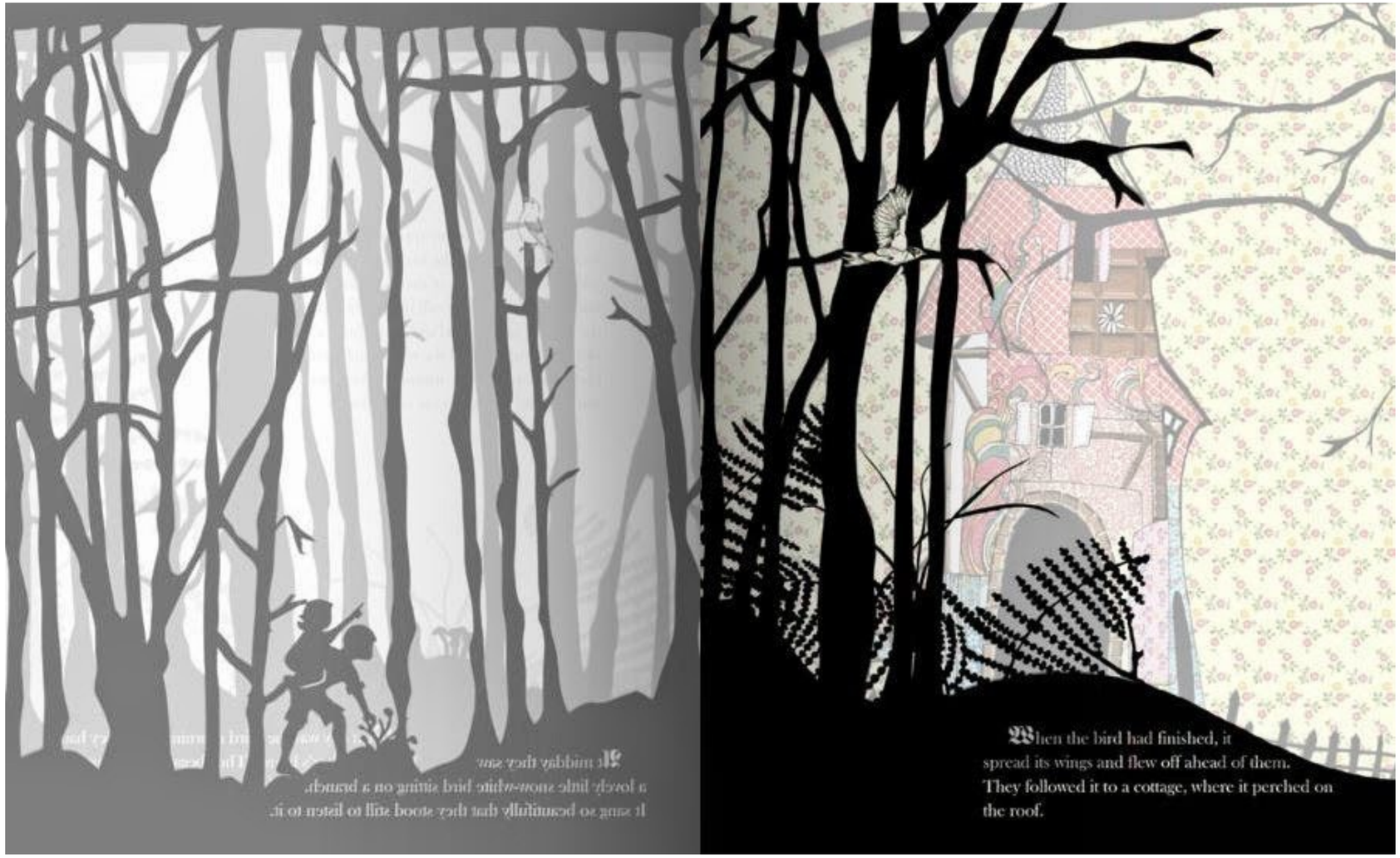


Peter Callesen



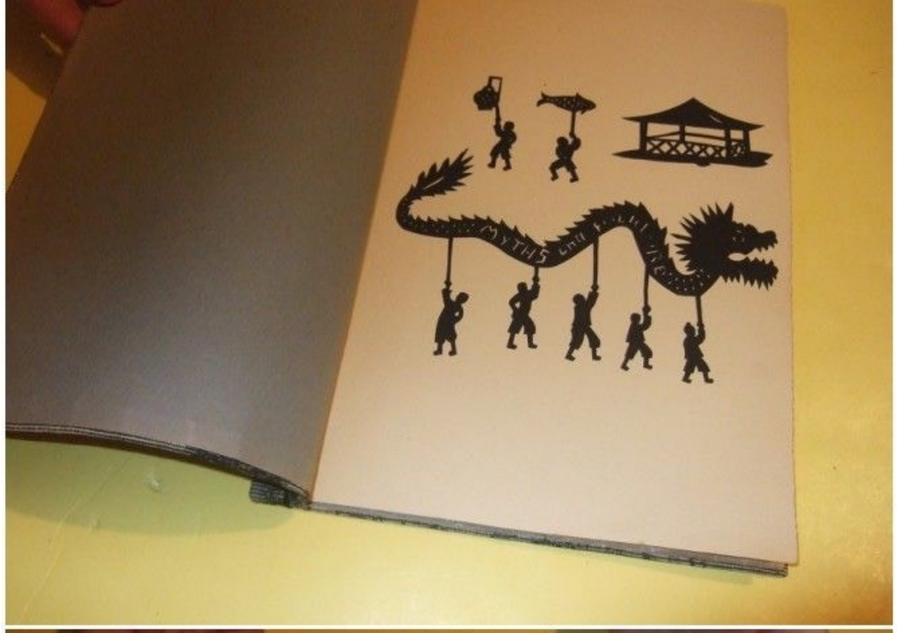


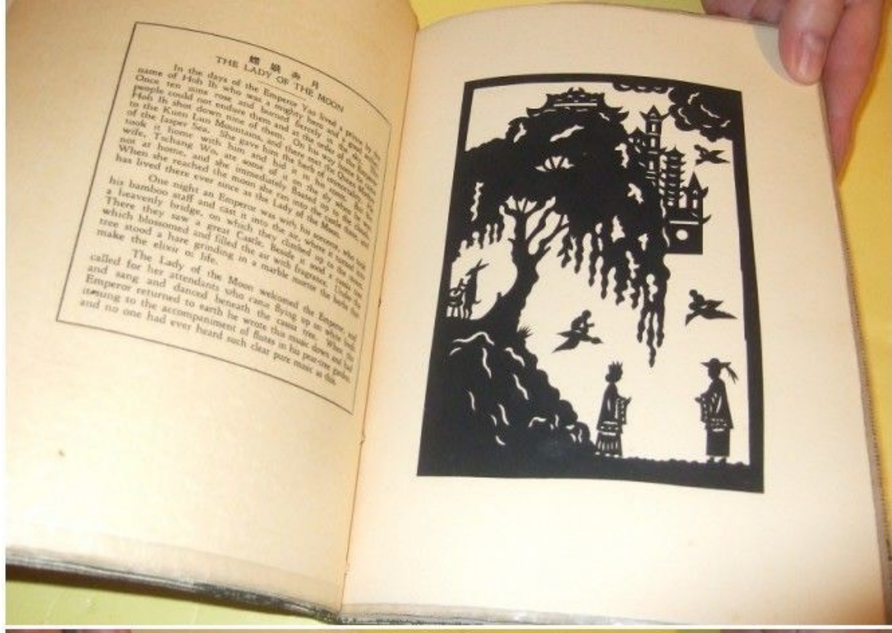


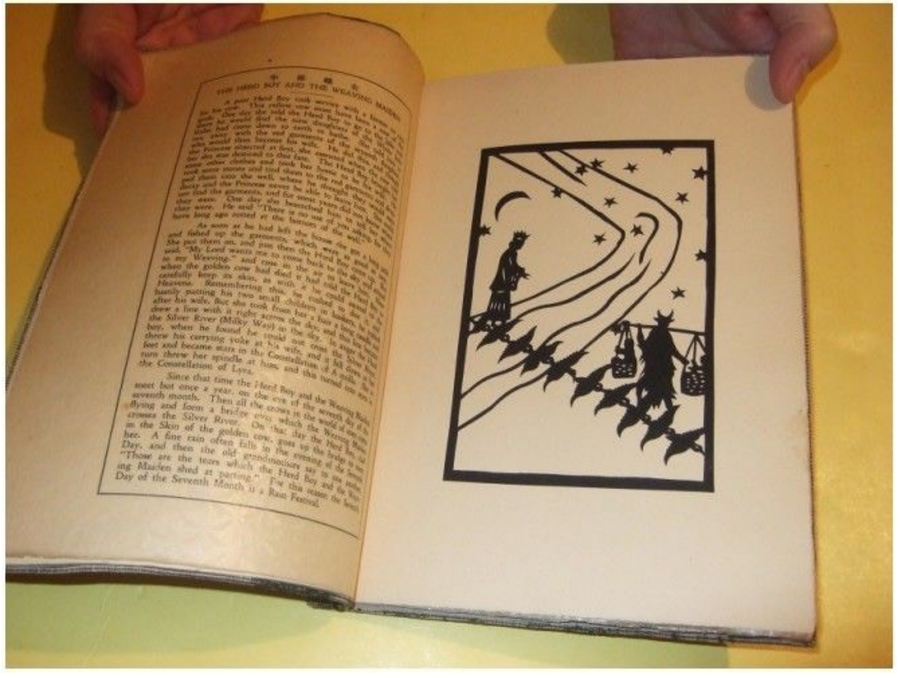

When the bird had finished, it
spread its wings and flew off ahead of them.
They followed it to a cottage, where it perched on
the roof.

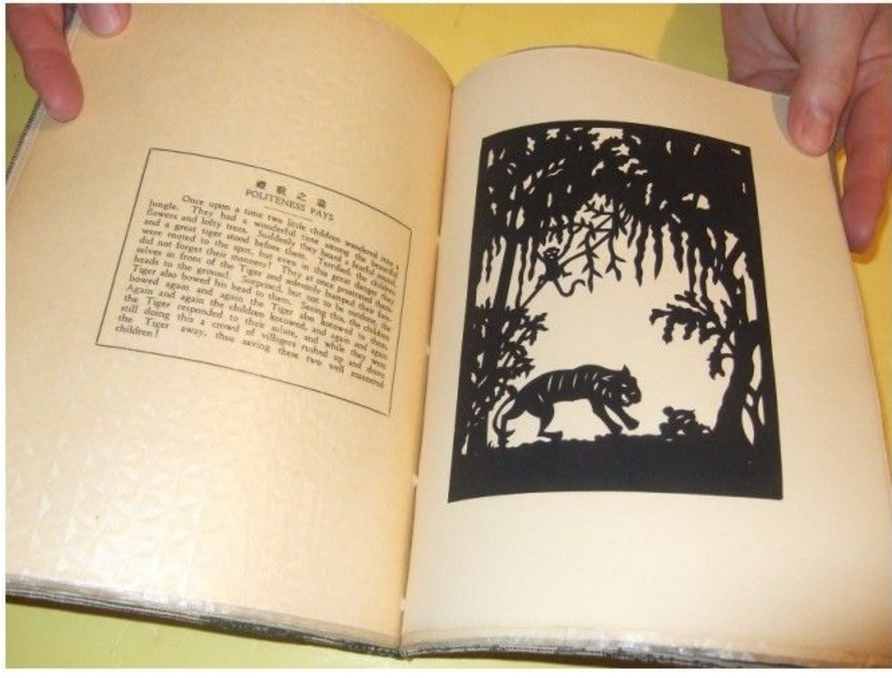


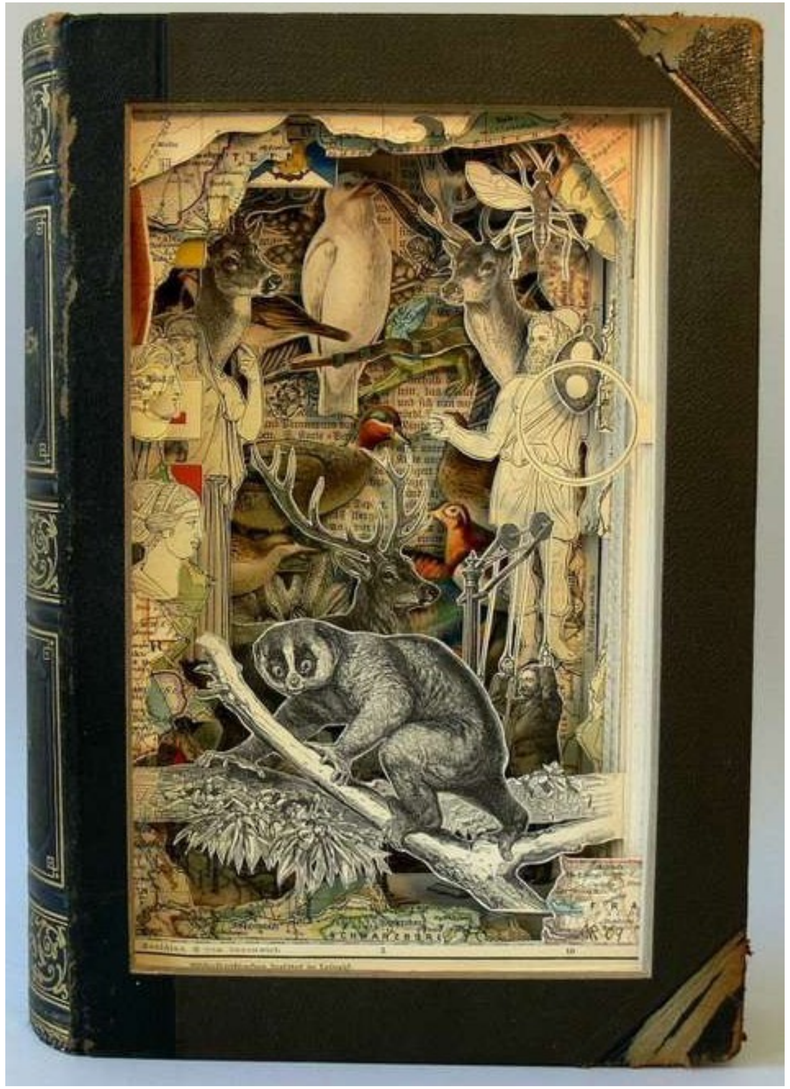



MYTHS


THE LADY OF THE MOON


THE HERD BOY AND THE WEAVING MAIDEN


POLITENESS PAYS







Alexander Korzer Robinson

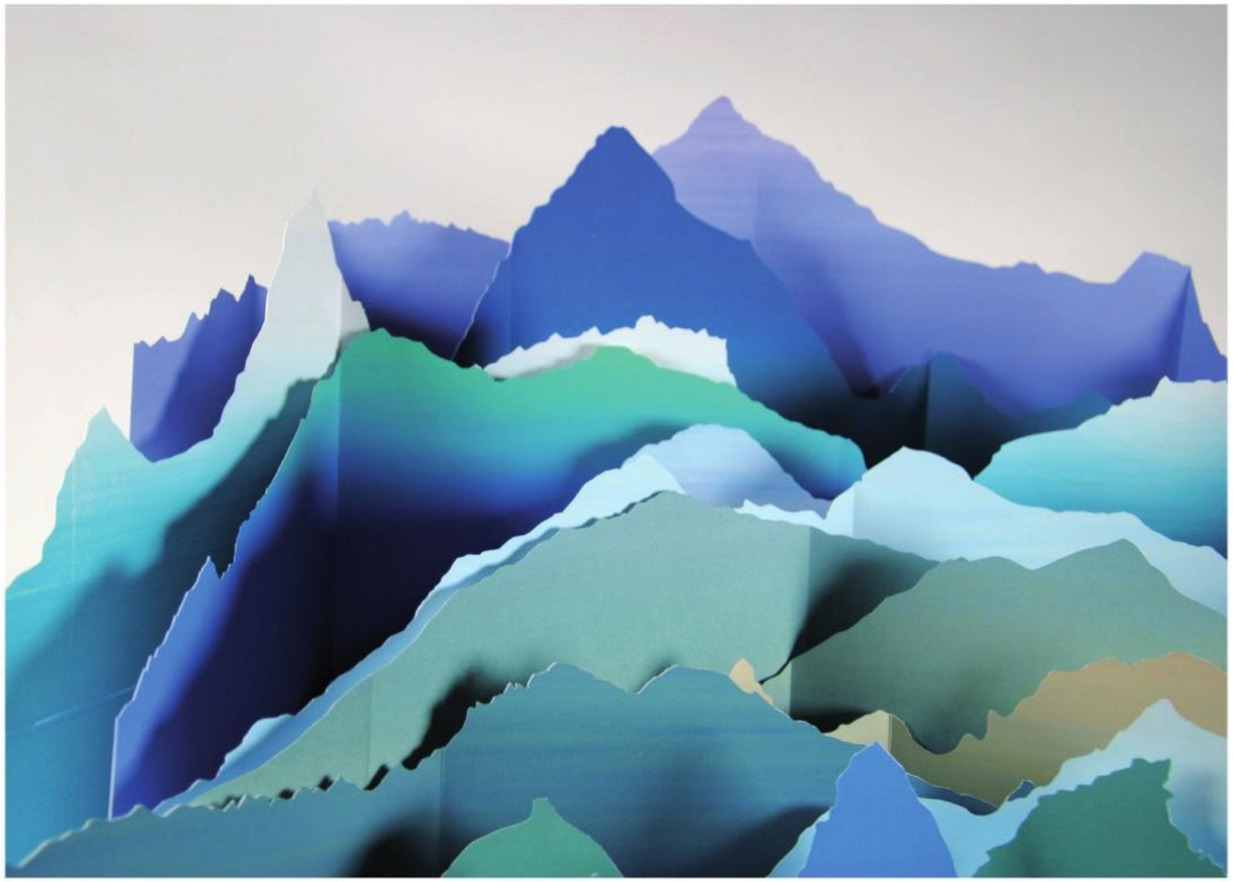





Poor little Cind-
to listened in silence to
"And who has been ta
soup?" growl Mamm
"What big eyes you have
89

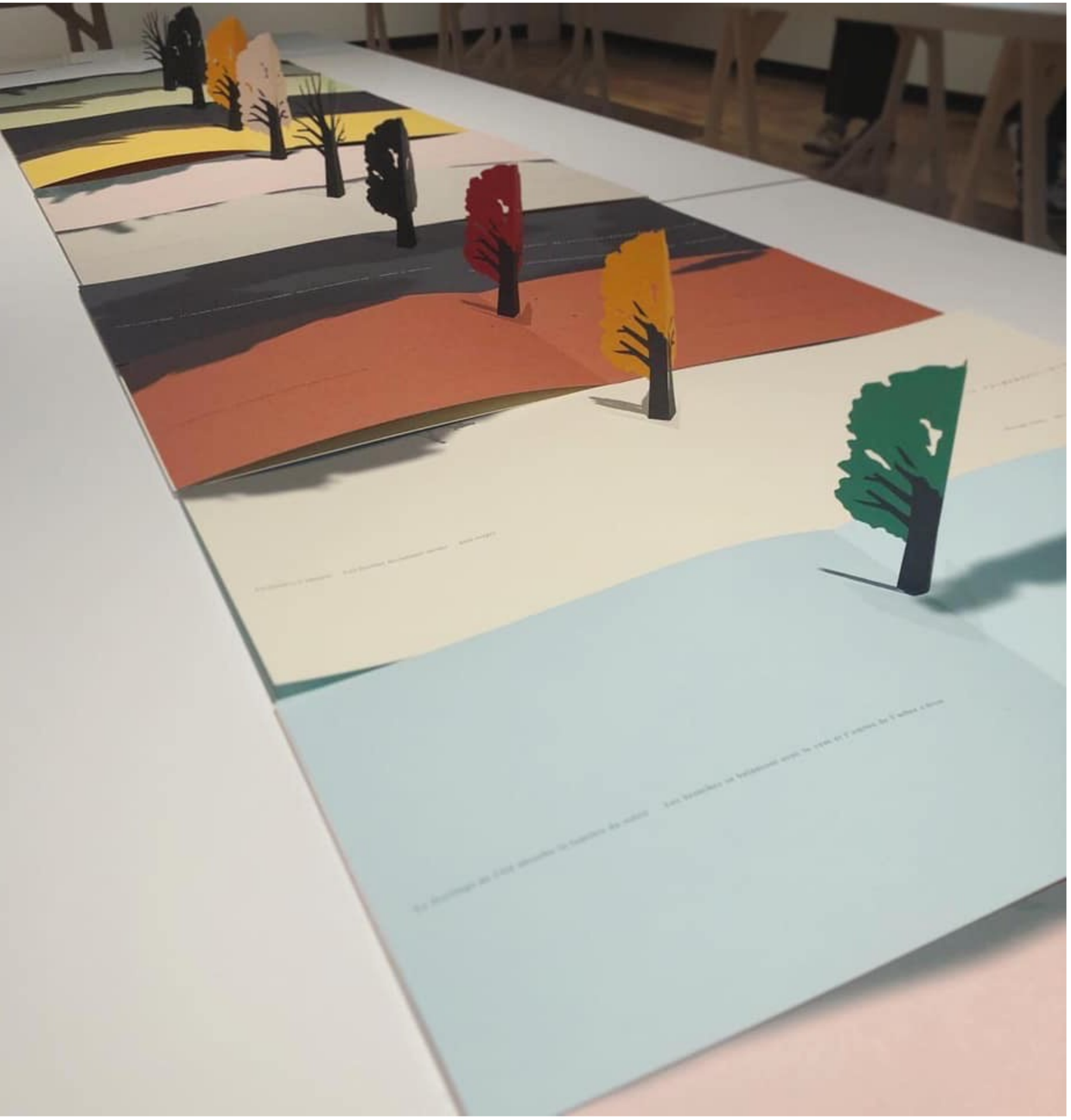
Inspiration / Some possibilities



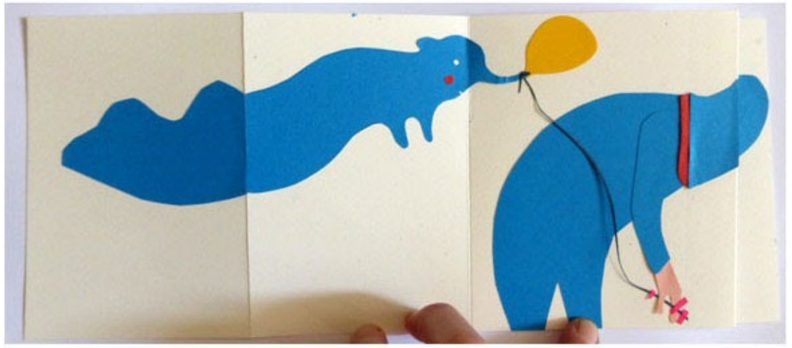




Katsumi Komagata









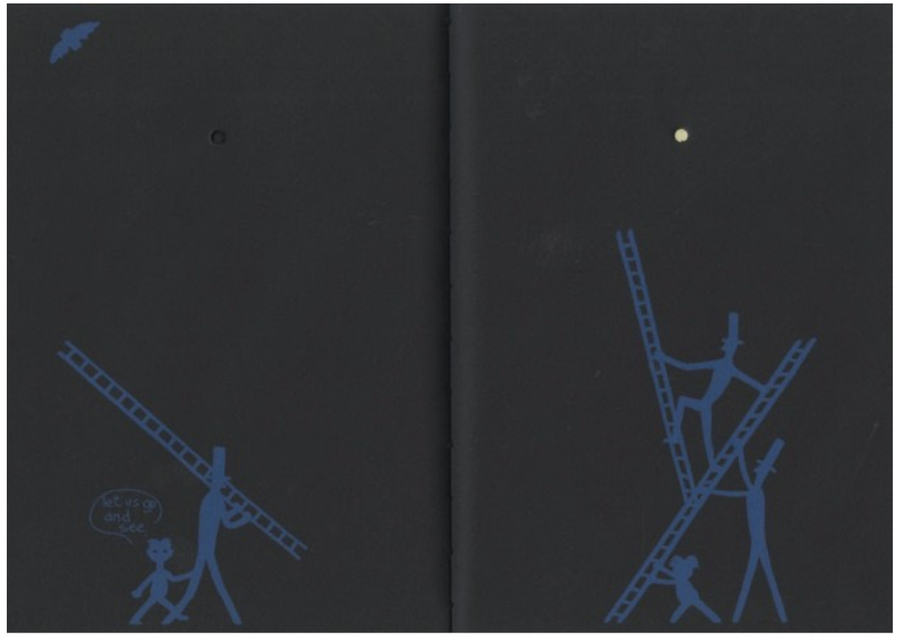


Katsumi Komagata





Bruno Munari







Bruno Munari

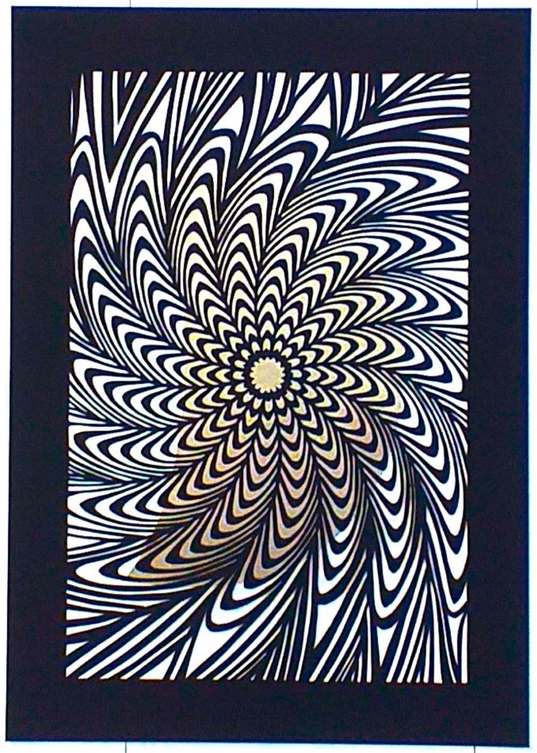
Exemplos de anos passados | Examples from past years

Cutout Illustration



Ana Chaves

Cutout Illustration





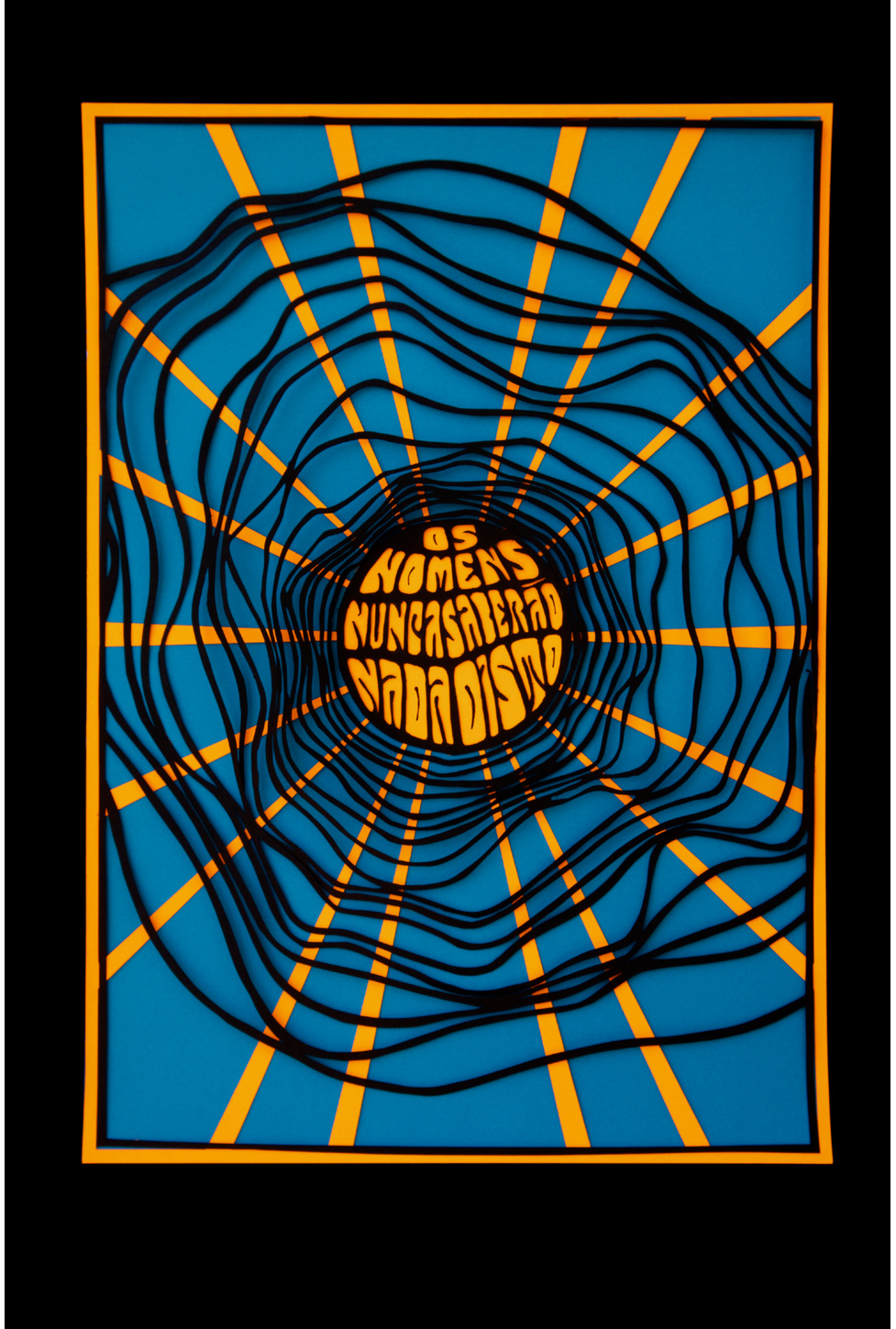
Raquel Costa

Cutout Illustration



Helena Ferreira

Cutout Illustration



Ana Oliveira

Cutout Illustration



António Santos

Cutout Illustration



Carlos Cassaca

Cutout Illustration



Ana Simão

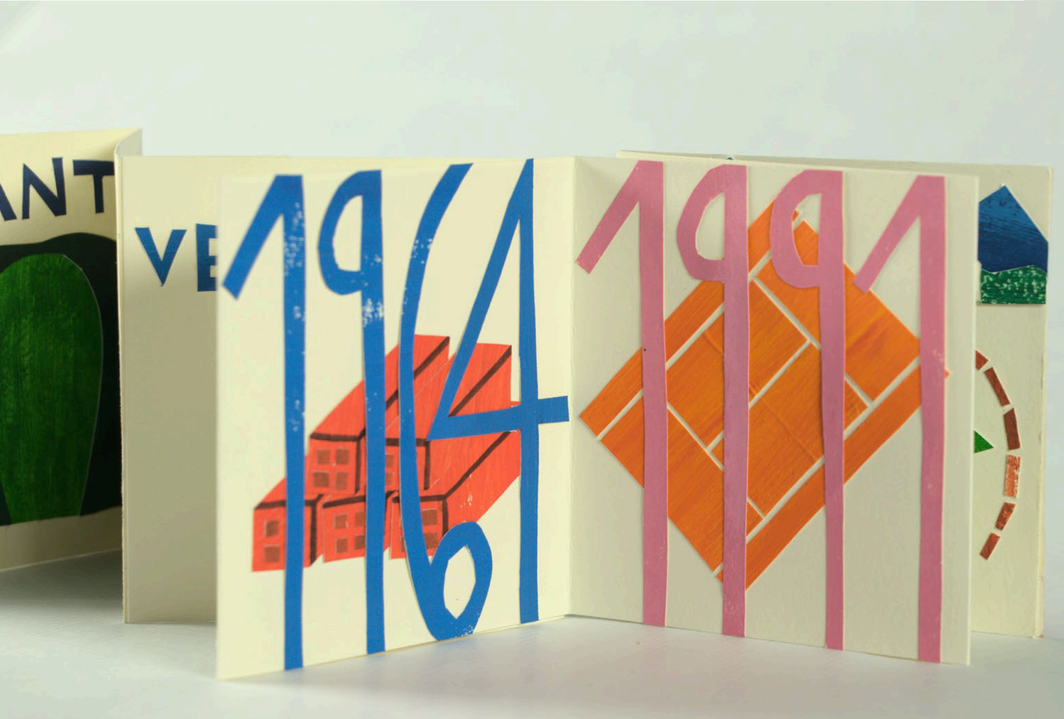
Cutout Illustration + Leporello





Daniela Fortunato







Paula Roset

Cutout Illustration + Paper object







Fábio Casaleiro

Cutout Illustration + Paper object







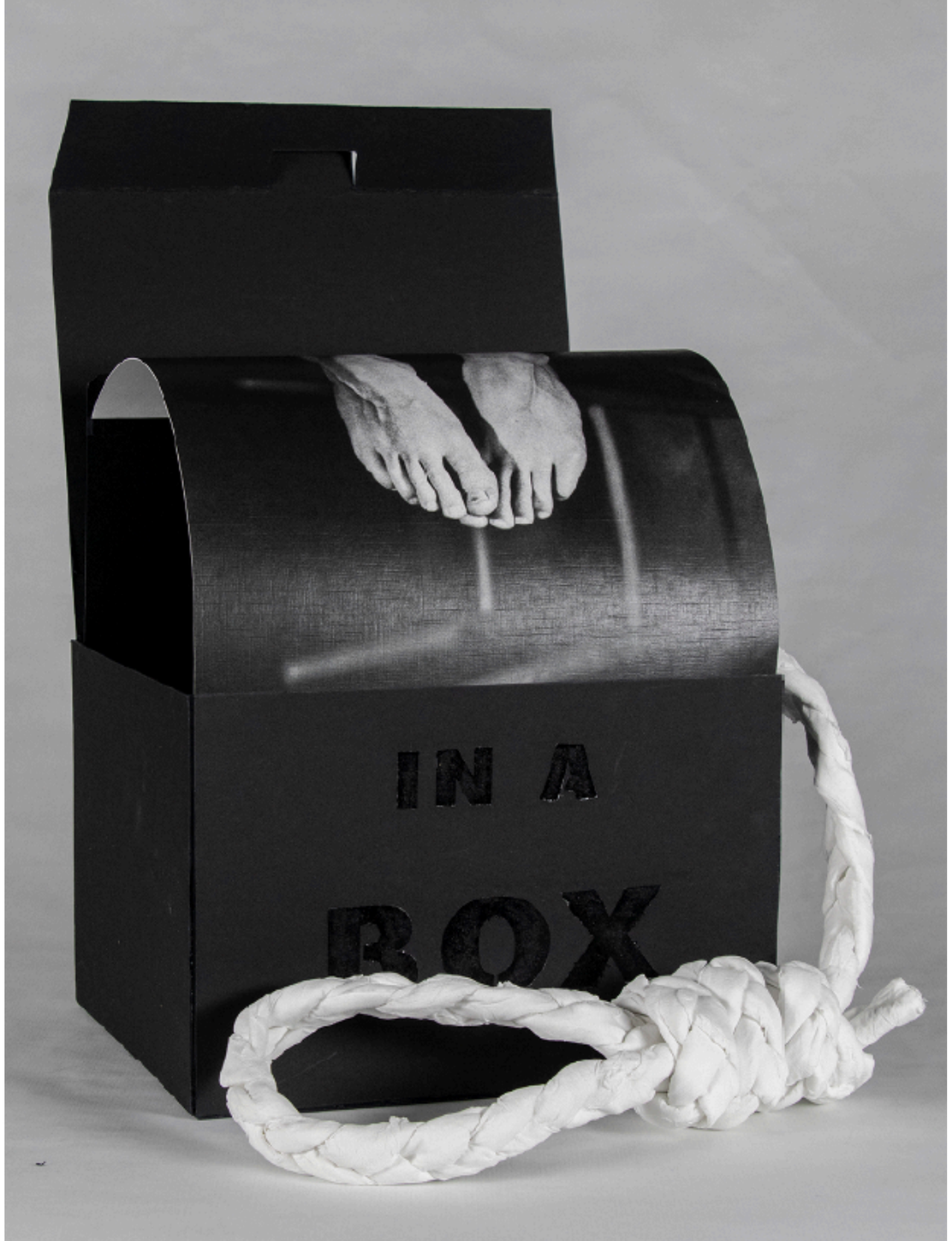




Diana Duarte

Paper object





João Marques

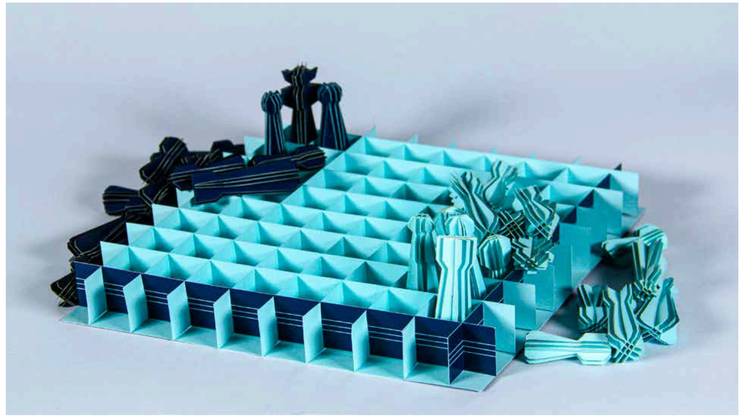
Cutout Illustration

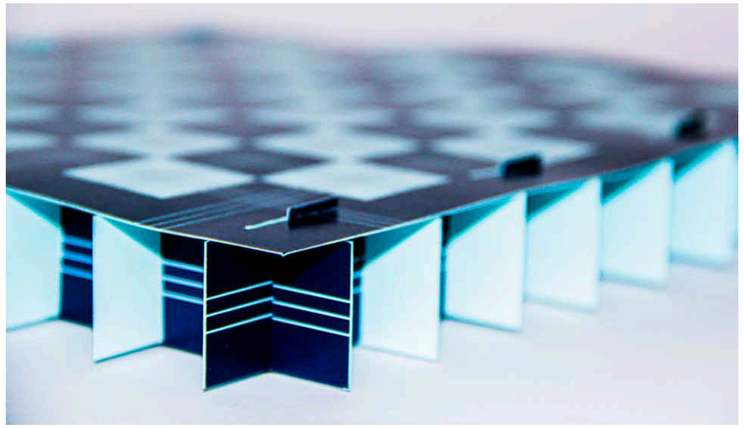




Maiara Gregório

Paper object



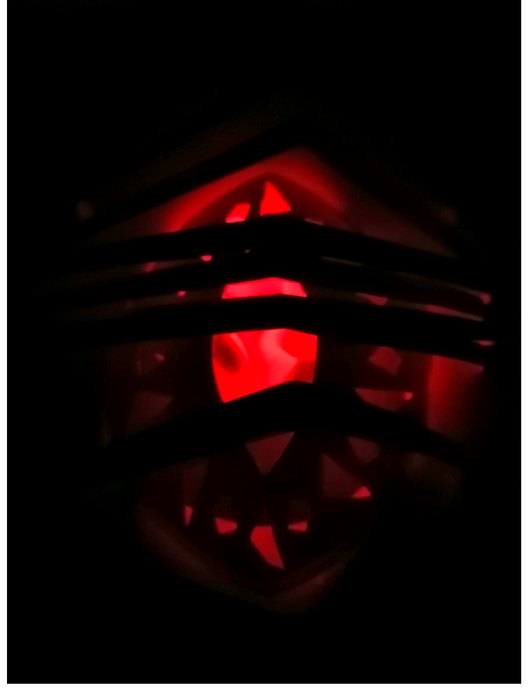


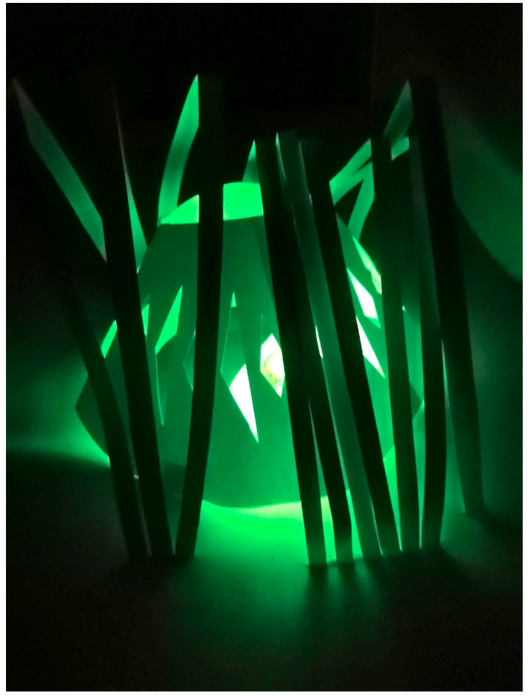


Sidónio Silva

Music/ Spread with Pop-UP

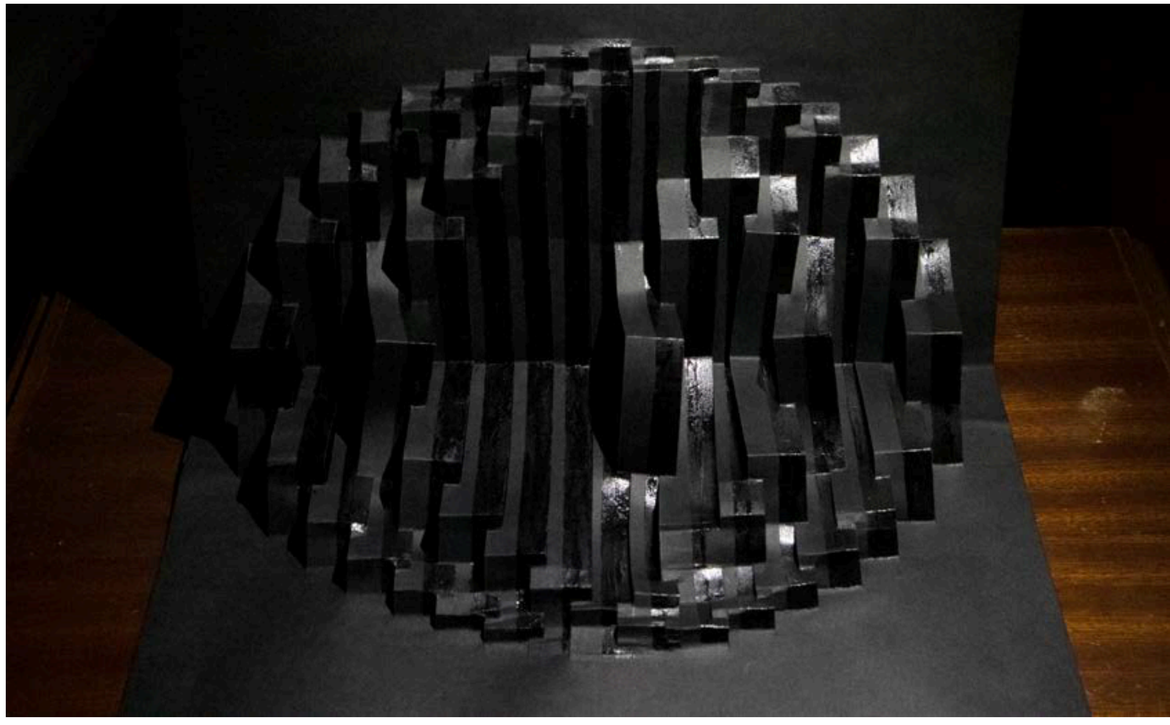






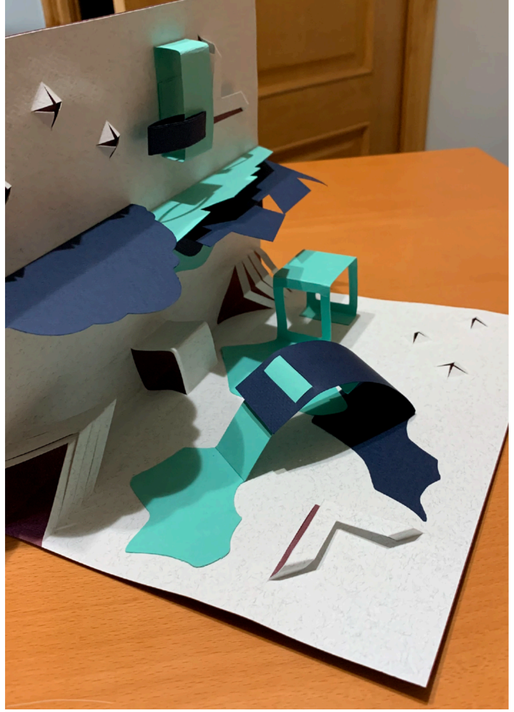
Amância Pinho





Music/ Spread with Pop-UP

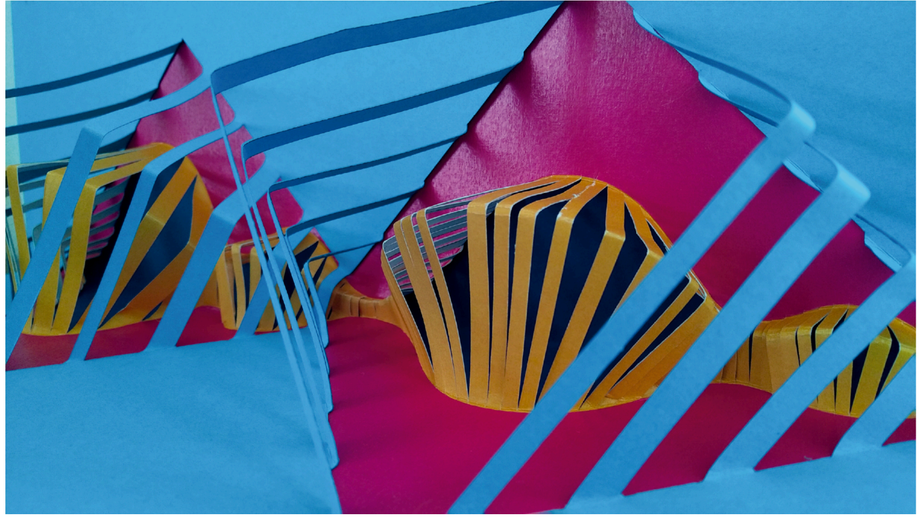


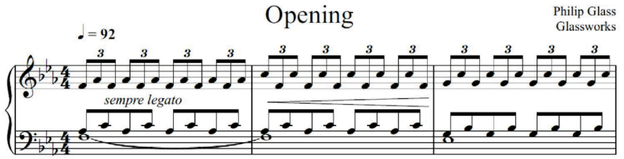


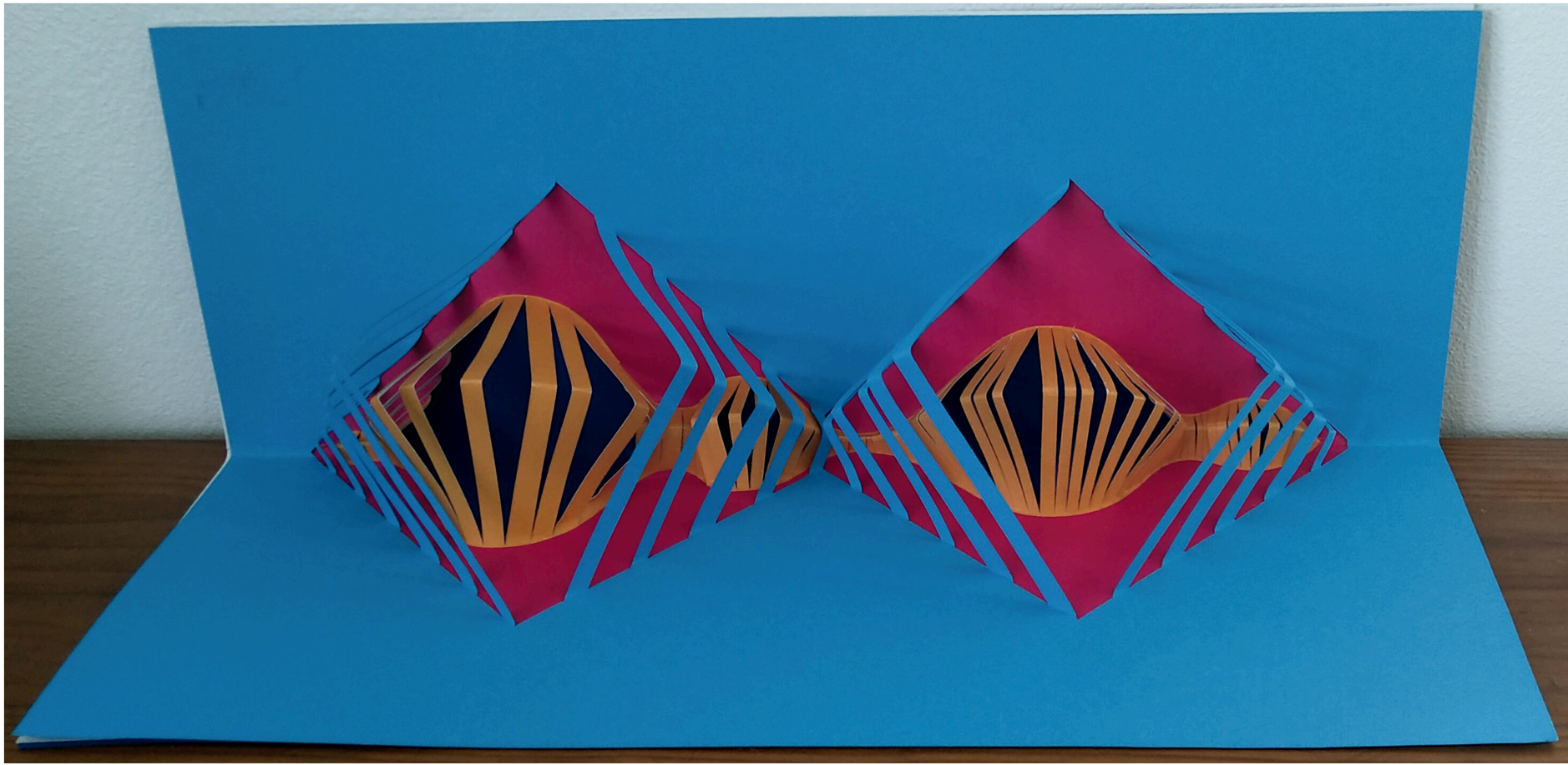


Ana Chaves

Music/ Spread with Pop-UP

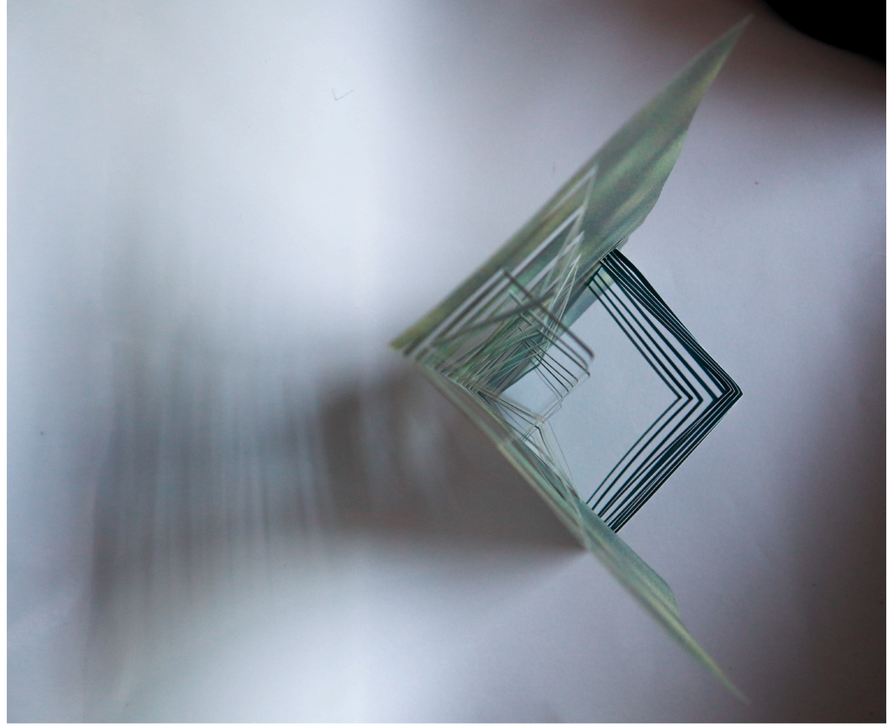


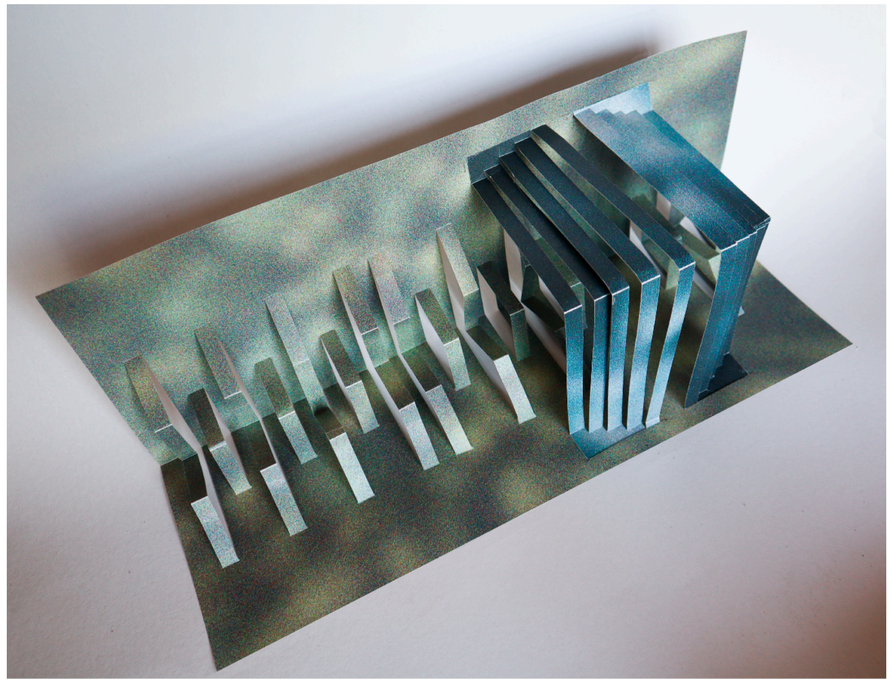


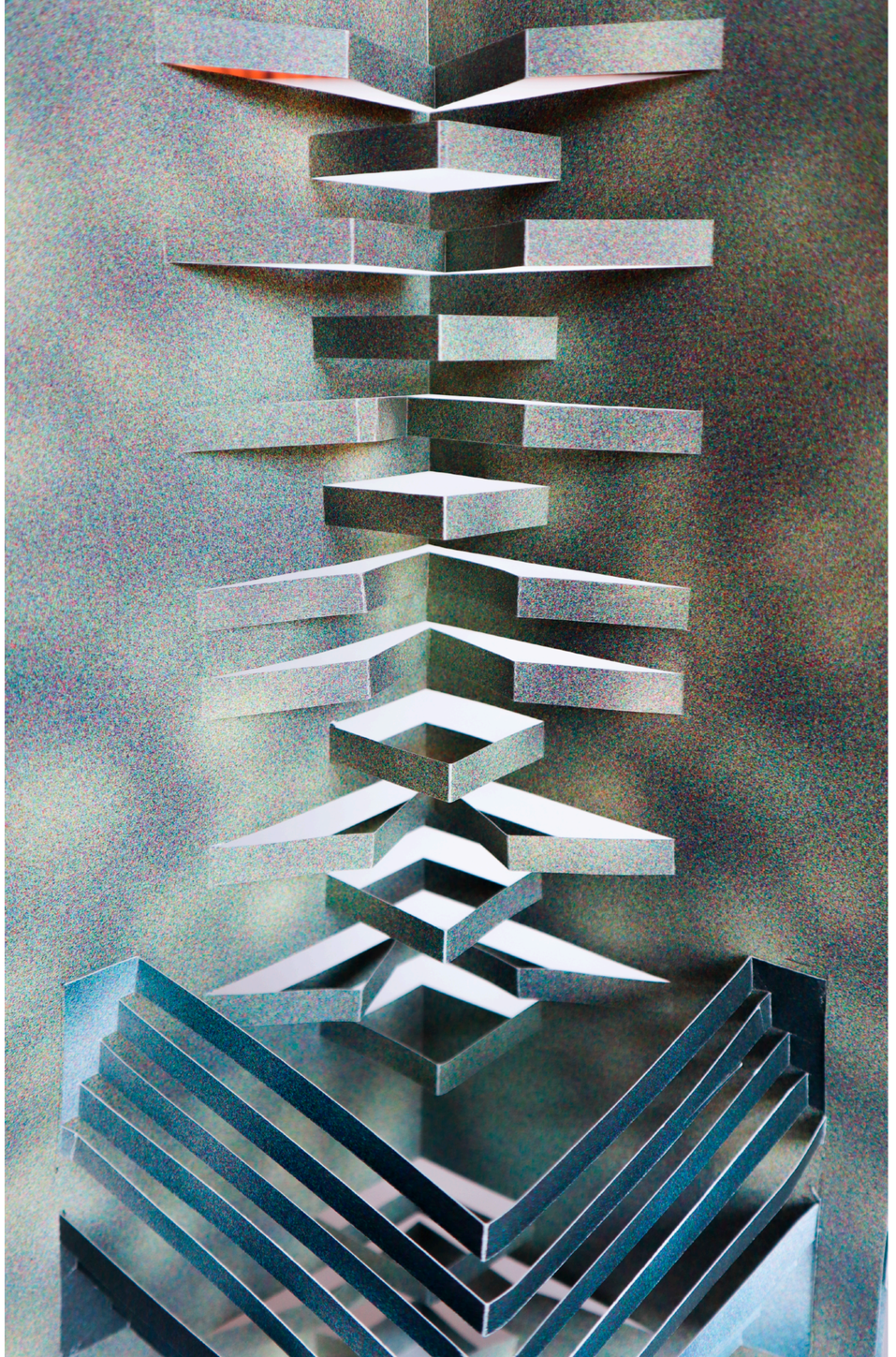


Catarina Gonçalves

Music/ Spread with Pop-UP

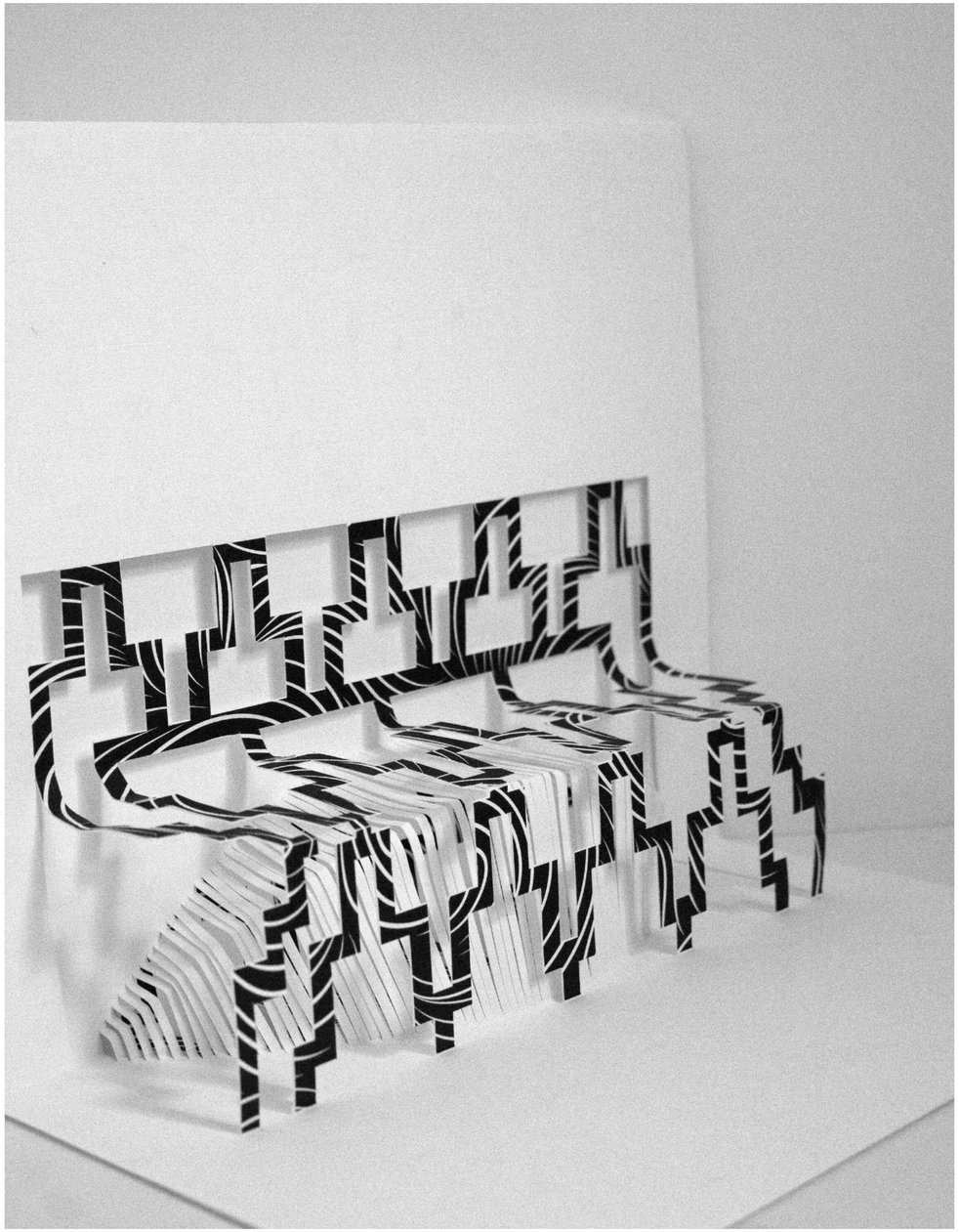


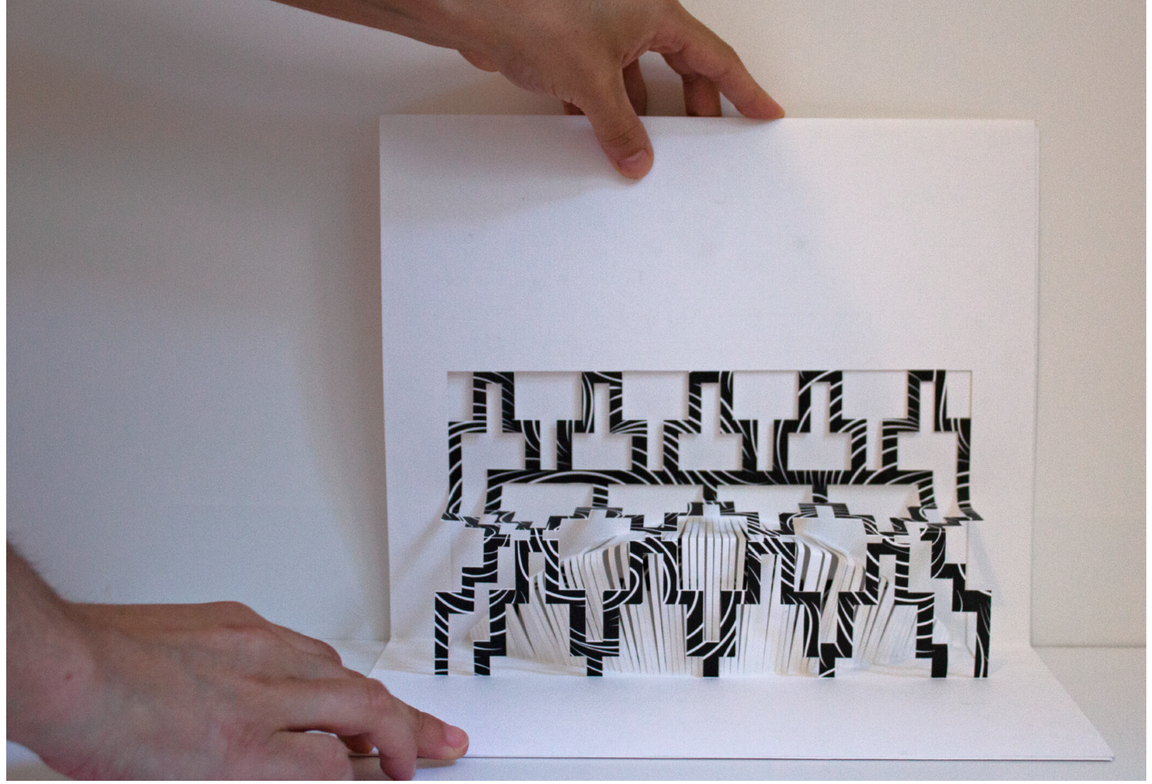


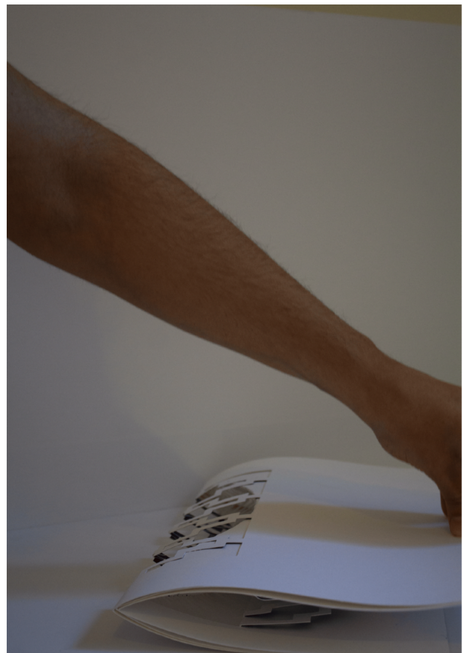


Patrícia Silva

Music/ Spread with Pop-UP



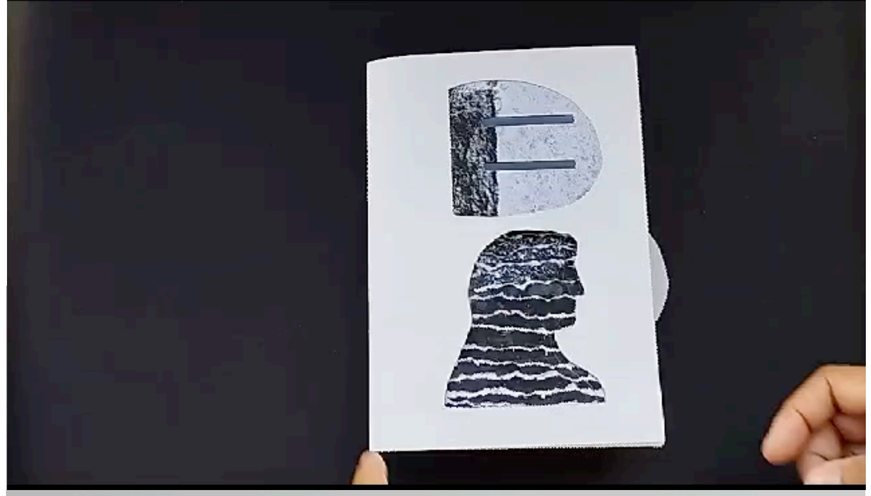




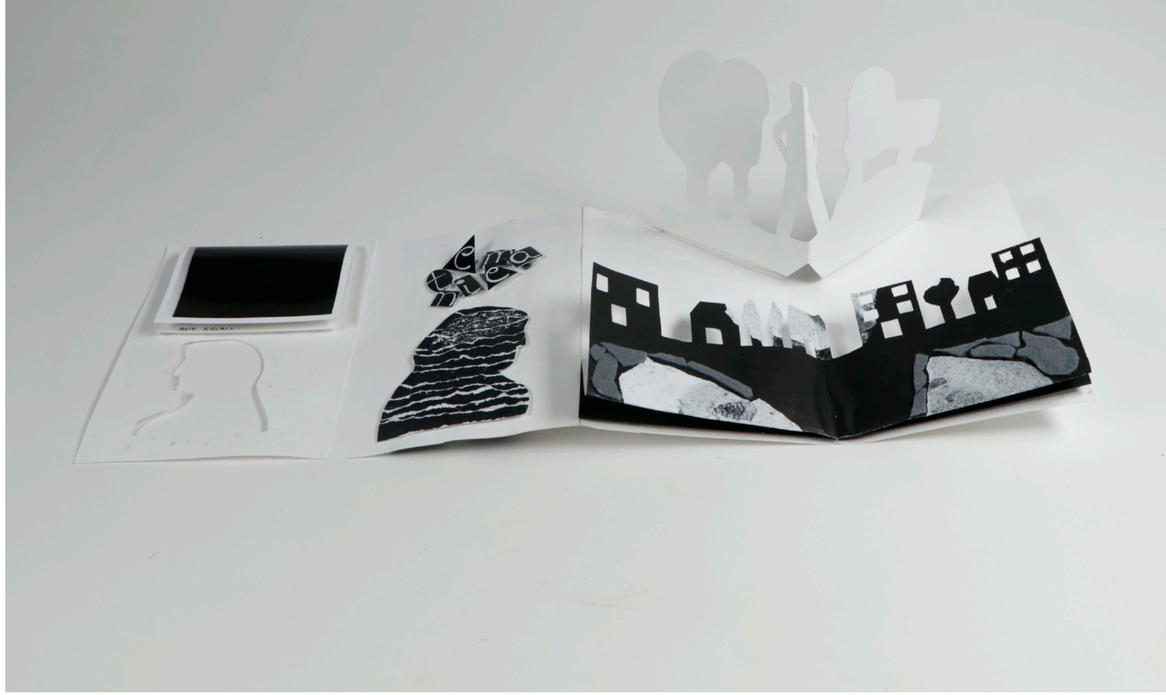


Sara Silva

Leporello with Pop-UP





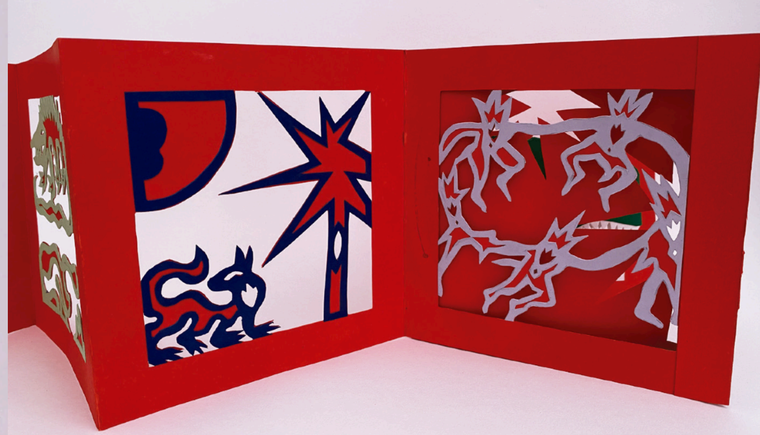




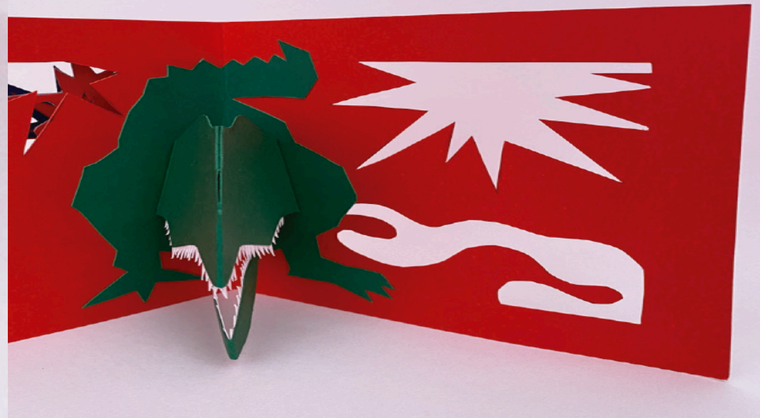
Rushi Benerjee

Leporello with Pop-UP









Andreia Ribeiro

Leporello with Pop-UP











Rachel Ross

Leporello with Pop-UP







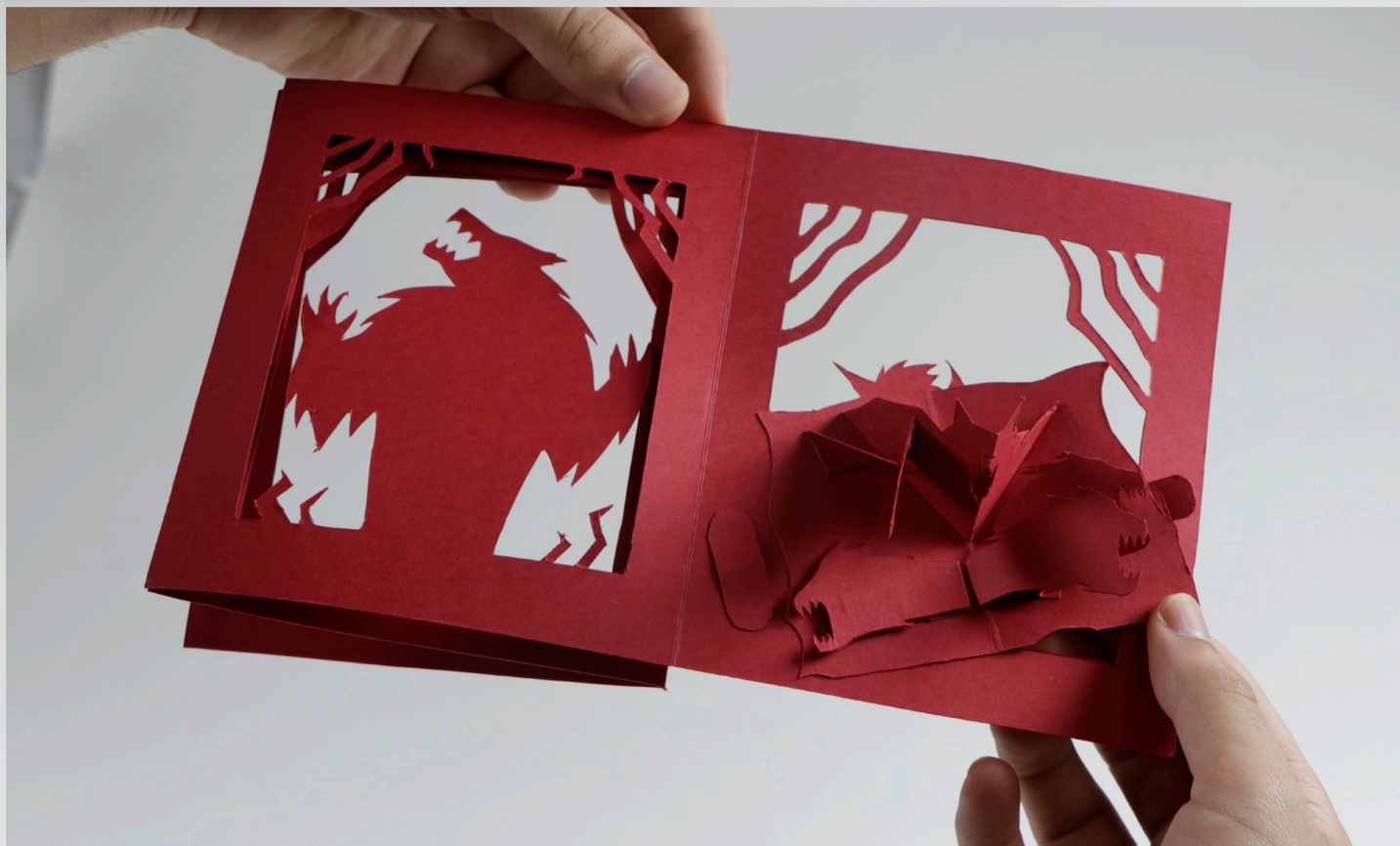


Mariana Arriegas

Leporello with Pop-UP

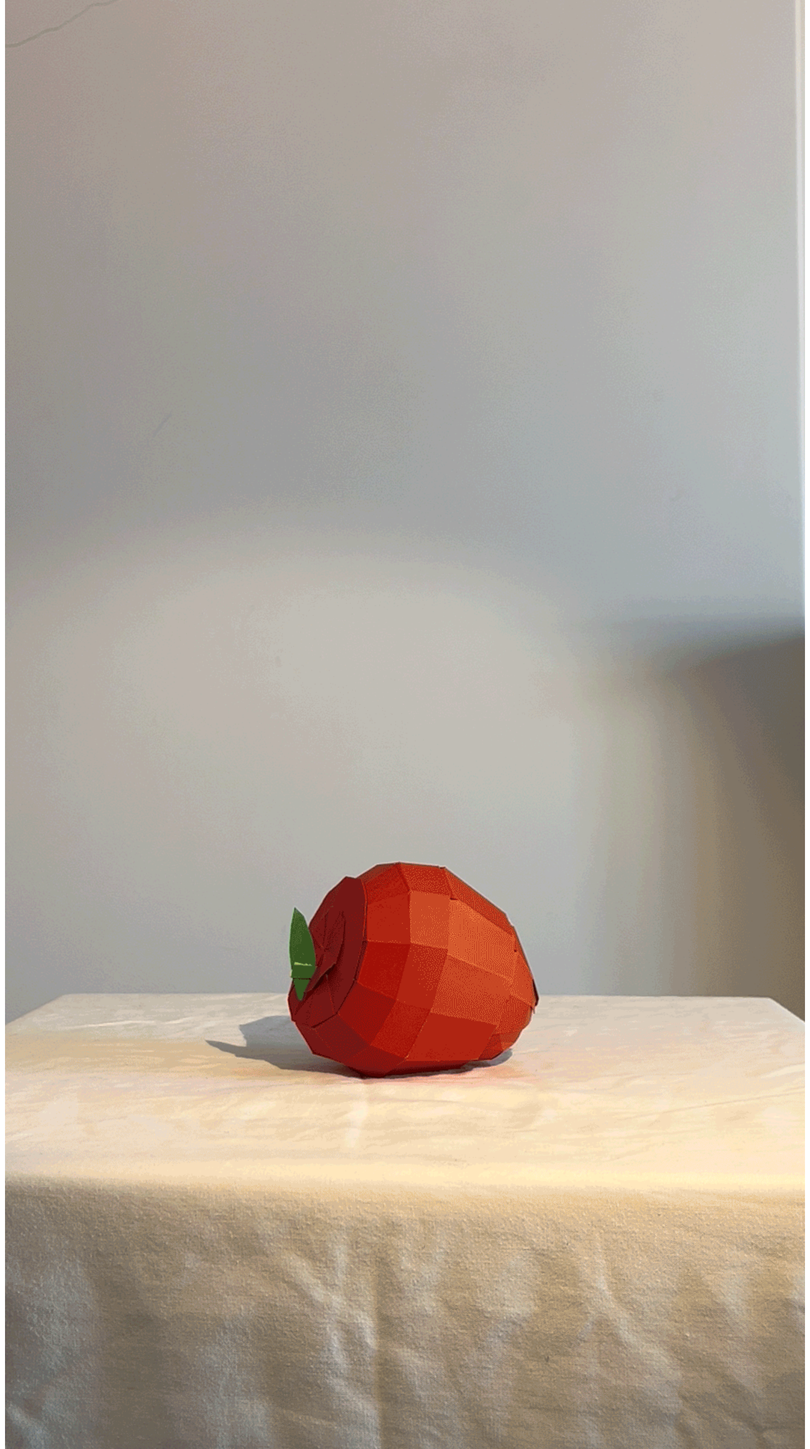






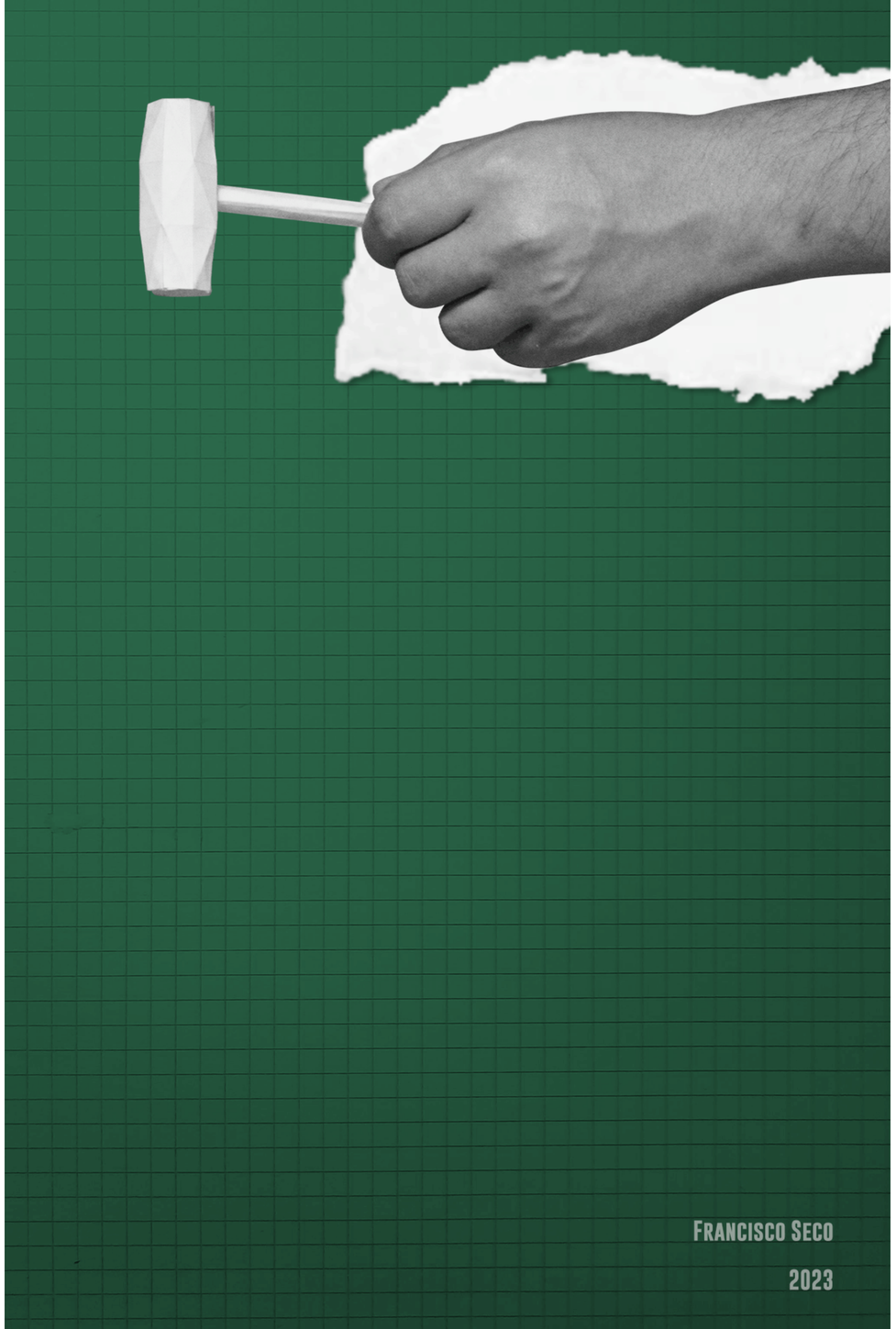
David Nunes

Animated Poster



Sohaila Elmoataz

Animated Poster



Francisco Seco

Animated Poster



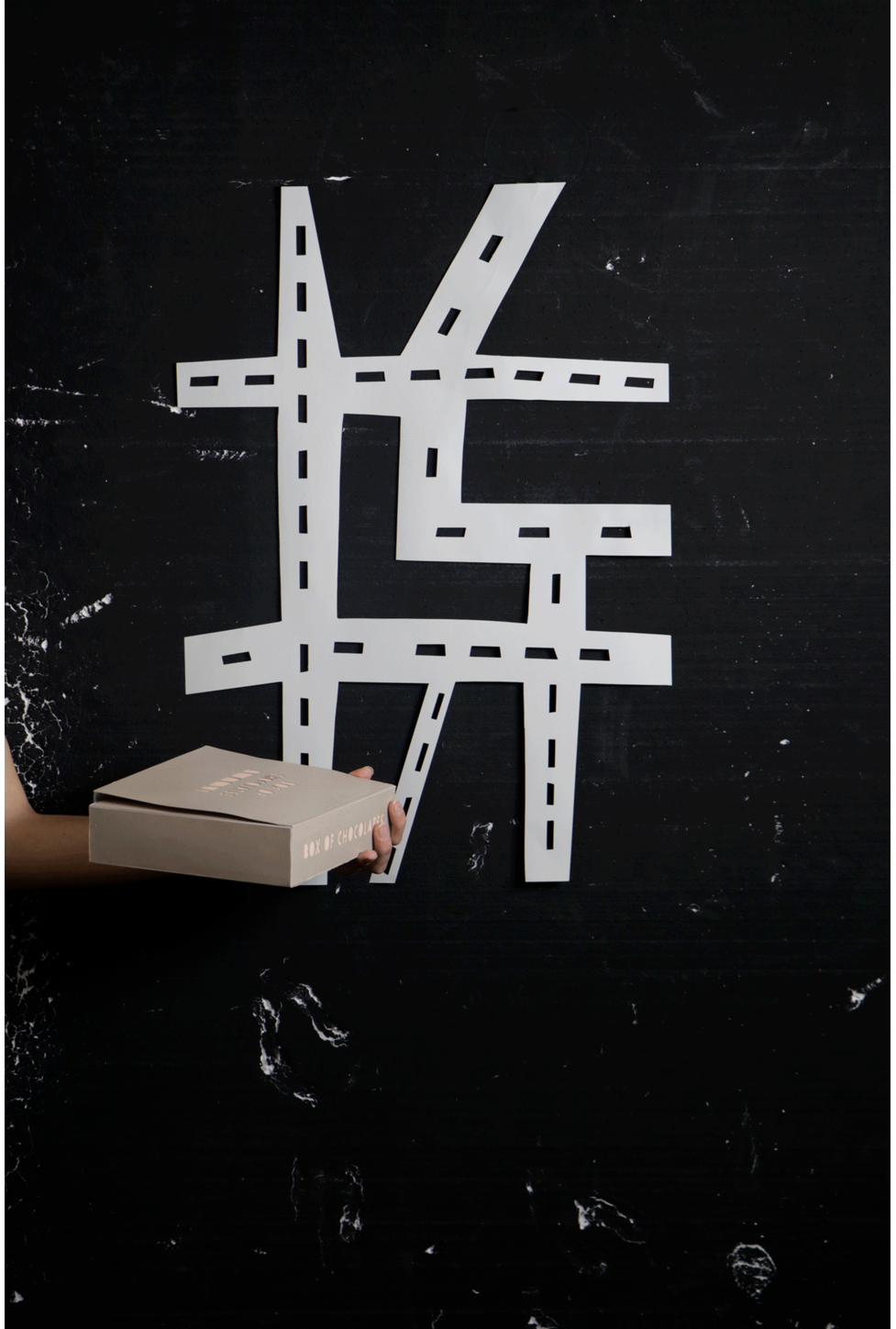
Leonor Reis

Animated Poster



Sílvia Brízio

Animated Poster



Valentina Vecchio

2 EXERCÍCIOS | Exercises

Duração: 3 aulas para cada exercício
Duration: 3 classes for each exercise

I- ONE4ALL & ALL4ONE

. Objeto físico manuseável

Leporello criado por recortes e pop-ups

I- Manipulable physical object

Leporello created by cut-outs and pop-ups



Laura Barrett

+



Jacob Grimm

+



MHT PopUp

II- MINI ME/I AM A GIANT

. Poster

Motion poster

II- Poster

Motion poster created as photography, with the use of cut-outs and tridimensional paper object



Shutterstock

+



Eugenia Zoloto

+



Matt Reeves

Para avançar | To Advance

Desafio

I- ONE4ALL & ALL4ONE

- What do you want to explore? What narrative? What single image that becomes 4 images? Where will you add pop-ups? Why? How?

II- MINI ME/I AM A GIANT

- What do you want to explore? What physical object will be recreated as paper in 3D? How will you add paper cutouts to the image/character? What movement will you add? Why?



Bom trabalho!
Good work!

nuno.marques@ipleiria.pt

Estudos do Papel | Paper Studies

Mestrado em Design Gráfico - Apresentação 03 | Presentation 03

Pop-ups

Nuno Fragata Marques | S2 | 2023/2024

Exercise I: Leporello + Cutout illustration + **Pop-up**



Papel Paper

CARACTERÍSTICAS DO PAPEL	**PAPER CHARACTERISTICS**
ÓPTICAS	OPTICAL
BRILHO DO PAPEL	**SHINE OF PAPER**
LUMINOSIDADE DO PAPEL	**PAPER BRIGHTNESS**
OPACIDADE DO PAPEL	**PAPER OPACITY**
COR DO PAPEL	**PAPER COLOR**
FÍSICAS	PHYSICAL
RASGO / RESISTÊNCIA À TRAÇÃO	**TEAR / TENSILE STRENGTH**
RESISTÊNCIA HÚMIDA	**WET STRENGTH**
RESISTÊNCIA À DOBRA	**FOLDING RESISTANCE**
FORÇA DE EXPLOSÃO	**EXPLOSION FORCE**

Cutout with a cutter

vs

Cutout with a plotter

Pop-ups/ Engenharia do papel
Tridimensionalidade
Regras, estruturas e formas

Pop-ups / Paper engineering
Three-dimensionality
Rules, structures and forms

Narrative in the visuals of the graphic object

Narrativa no grafismo do objeto gráfico

Cortes e Vincos

Cuts and Creases

Narrativa no manuseamento do objeto gráfico

Narrative in handling the graphic object

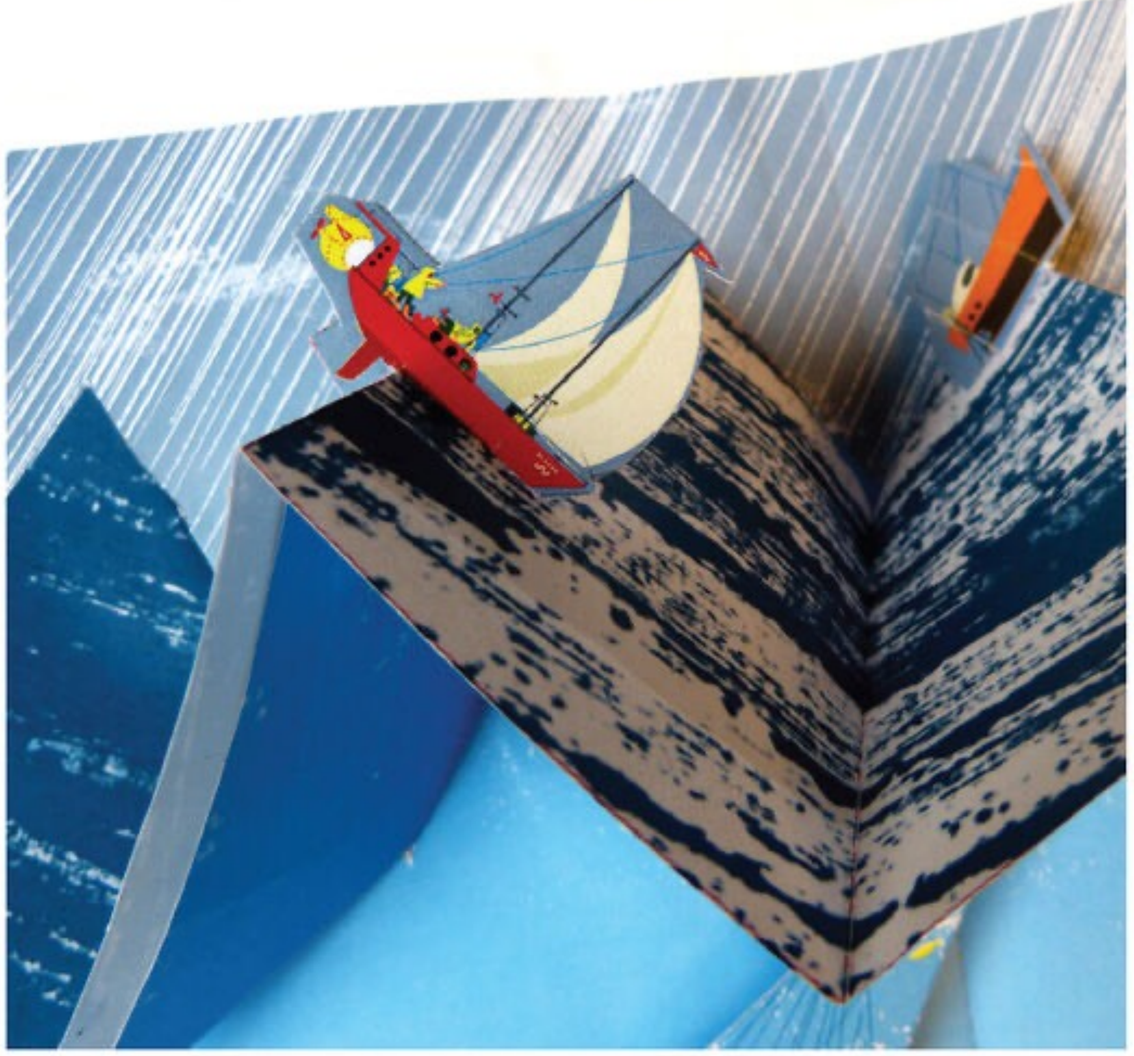




Alice's Adventures in Wonderland: A Popup Adaptation, Little Simon, 2003.

Robert Sabuda
http://www.robertsabuda.com





Under the Ocean, 2003.

Anouck Boirobert e Louis Rigaud



Under the Ocean, 2003.

https://youtu.be/8-22FE5vPm4

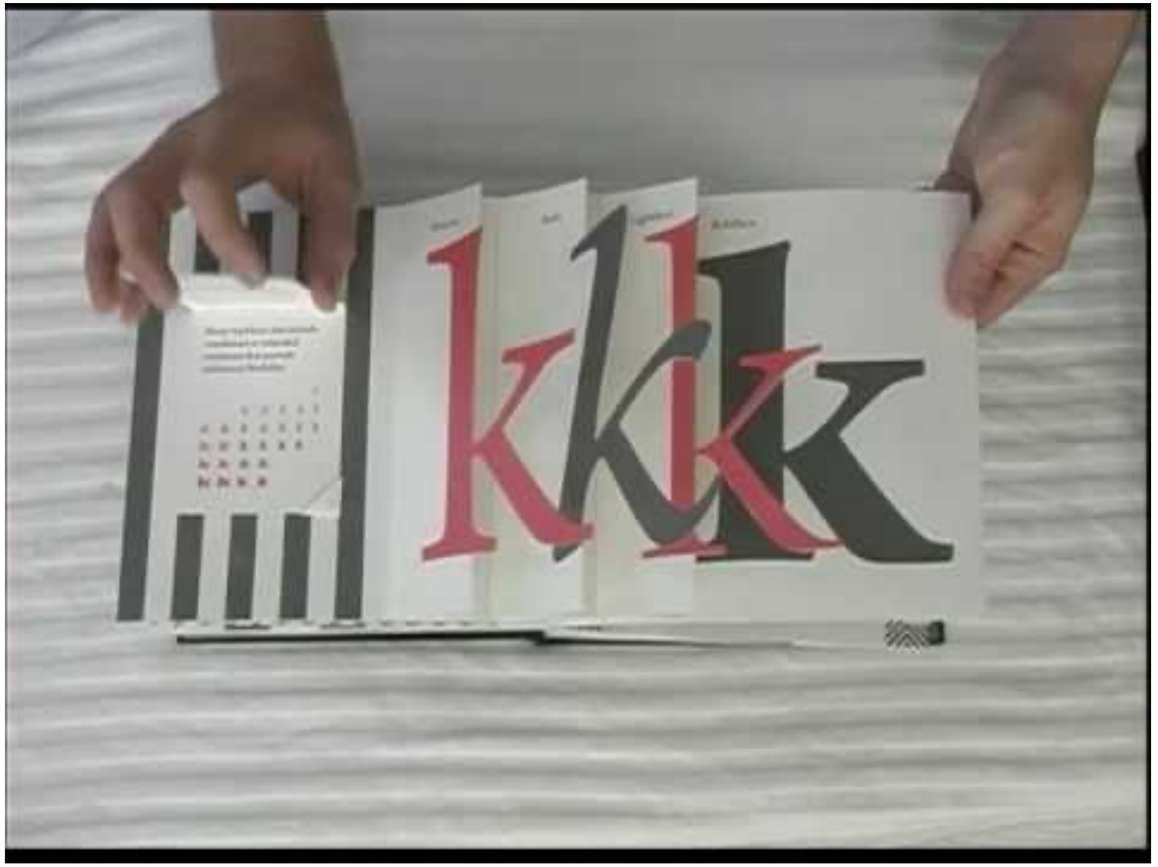
Anouck Boirobert e Louis Rigaud



Popville, 2010.

https://youtu.be/liGMeJJGVpU

Anouck Boirobert e Louis Rigaud



The Moveable Book of Letterforms, 2009. https://youtu.be/l4eaD-gh_NE

Kevin Steele





Leaves, 2017.

Yoojin Kim
https://www.yoojinkim.com

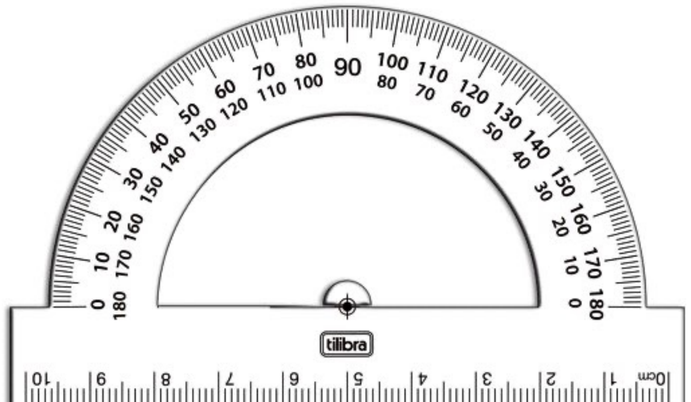


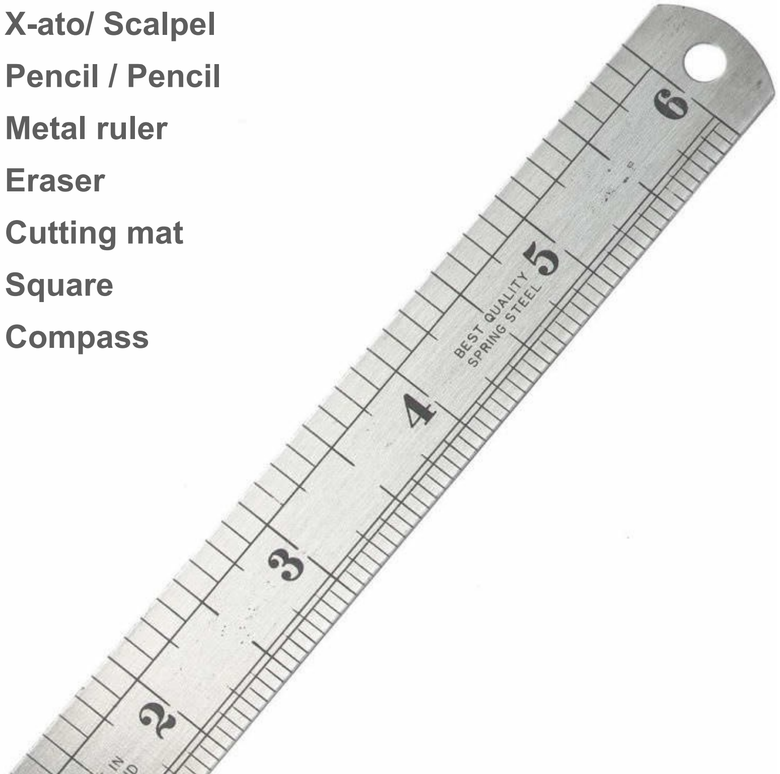


Materiais | Materials

Papel/ Cartolina
Papel vegetal
Tesoura
Cola de livros/ Cola em baton
Fita-cola
X-ato/ Bisturi
Lápis/ Lapiseira
Régua de metal
Borracha
Tapete para corte
Esquadro
Compasso

Paper / Cardboard
Vegetal paper
Scissors
Books glue/ Glue Stick
Adhesive tape
X-ato/ Scalpel
Pencil / Pencil
Metal ruler
Eraser
Cutting mat
Square
Compass





Pop-ups/ Engenharia do papel
Tridimensionalidade
Regras, estruturas e formas

Pop-ups / Paper engineering
Three-dimensionality
Rules, structures and forms

Narrative in the visuals of the graphic object

Narrativa no grafismo do objeto gráfico

Ênfase Mensagem

. Spread (2 páginas)
. Imagem recortada
. Destaque de elementos
/Tridimensionalidade

. Spread (2 facing pages)
. Cropped image
. Feature highlighting
/ Three-dimensionality

Narrativa no manuseamento do objeto gráfico

Narrative in handling the graphic object

Emphasis Message

Pensando a imagem | Thinking the image

A MENSAGEM / THE MESSAGE

O que vou comunicar e como vou comunicar
What will I communicate and how will I communicate it

O que há para ler / Como deve ser lido
What's there to read / How it should be read

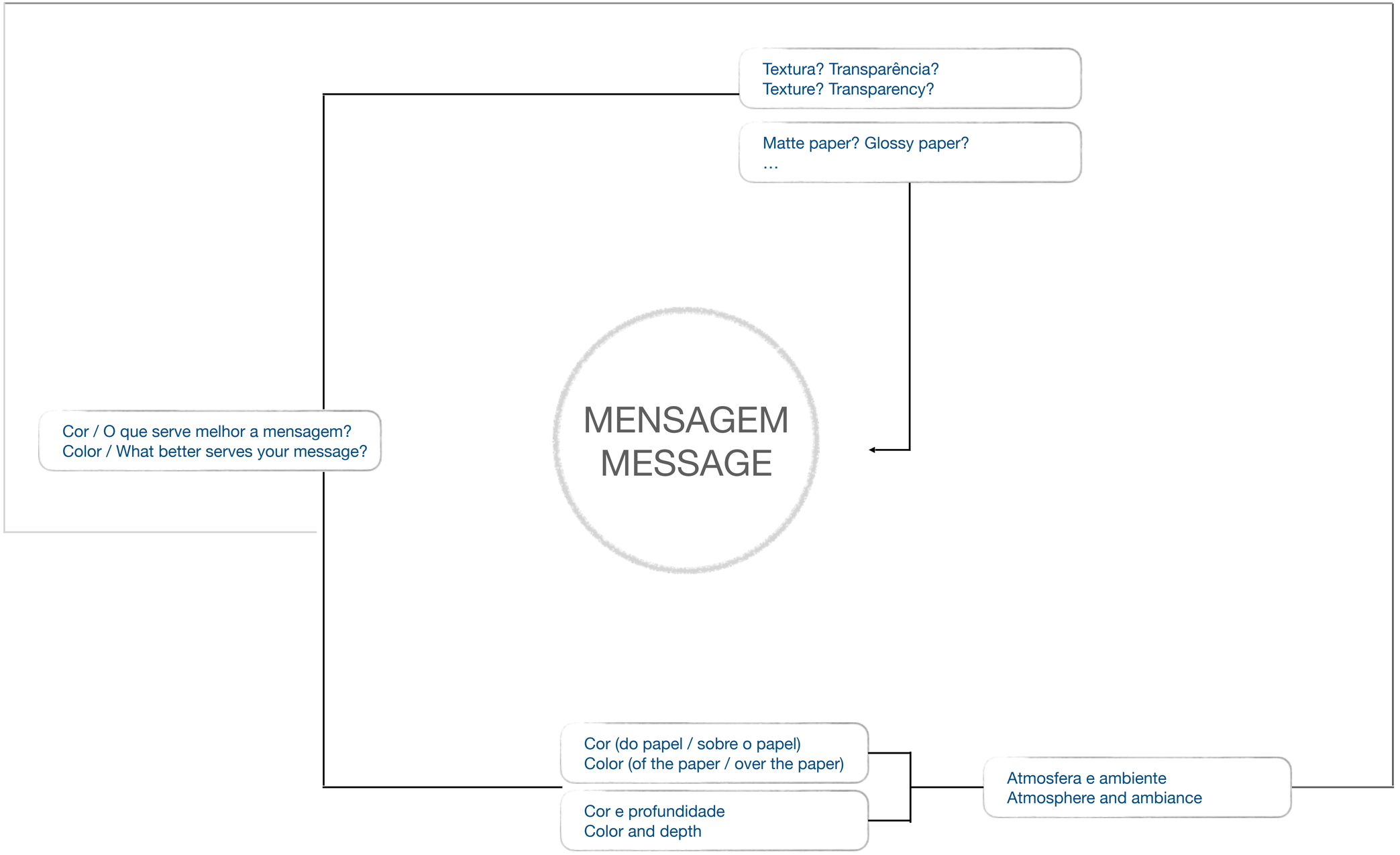
A NARRATIVA / THE NARRATIVE

Camadas / Foco / Encenação
/ Focus / Staging

Composição / Ritmo / Cor / Textura
Composition / Rithm / Color / Texture



Shaun Sheehy


Textura? Transparência?
Texture? Transparency?
Matte paper? Glossy paper?
…
MENSAGEM
MESSAGE
Cor / O que serve melhor a mensagem?
Color / What better serves your message?
Cor (do papel / sobre o papel)
Color (of the paper / over the paper)
Cor e profundidade
Color and depth
Atmosfera e ambiente
Atmosphere and ambiance

A ter em conta | To have in count

- Comecem por cortar as partes/linhas que identifiquem como sendo as mais frágeis. Depois avancem para a imagem geral. Start by cutting the parts / lines that you identify as being the most fragile. Then move on to the big picture.

- Podem usar uma régua ou algo similar como auxiliar para ajudara a fazer pressão e prender a folha de papel enquanto fazem os recortes. You can use a ruler or something similar to help you apply pressure and attach the sheet of paper while making the cutouts.

- Retirem as partes à medida que as cortam. Verifiquem que os cortes estejam bem terminados. Usem o bisturi para tirar a parte de papel e puxem com os dedos. Se não sair à primeira, apliquem um pouco de pressão. Remove the parts as you cut them. Check that the cuts are well finished. Use the scalpel to remove the paper and pull with your fingers. If it doesn't come out the first time, apply a little pressure.

- A lâmina do x-ato ou do bisturi deve ser nova e estar bem afiada. Ao mudar a lâmina, envolvam-na com fita-cola antes de a partir ou retirar. The blade of the x-ato or the scalpel must be new and very sharp. When changing the blade, wrap it with tape before breaking or removing it.

- Tenham em atenção que quanto mais grosso for o cartão que sirva como base de corte, mais rápido a lâmina ficará cega. Keep in mind that the thicker the card that serves as the cutting base, the faster the blade will be blind.

- Os vincos deverão ser feitos na parte do papel que será dobrada, assim irão facilitar esse processo. The creases should be made on the part of the paper that will be folded, thus facilitating this process.

A ter em conta | To have in count

- Na planificação, diferenciar as linhas de corte e as linhas de vinco (cor, linha contínua ou intermitente,…). In planning, differentiate the cut lines and the crease lines (color, continuous or intermittent line, ...).

- Façam testes aos vários elementos do vosso pop-up, planeiem a montagem e usem guias para definir/registar a localização exata dos elementos. Test the various elements of your pop-up, plan the assembly and use guides to define / record the exact location of the elements.

- Tenham atenção à escala. Mudar a escala de um elemento poderá fazer com que seja necessário mudar a escala de outros. Pay attention to scale. Changing the scale of one element may make it necessary to change the scale of others.

- Esbocem tudo antes de produzir alguma coisa (Os vários desenhos de esboços irão servir para entender a totalidade do objeto em relação à vossa mensagem, como cada parte se relaciona com o todo e para abordar o trabalho como partes que se complementam). Sketch everything before producing anything (The various sketch drawings will serve to understand the totality of the object in relation to your message, how each part relates to the whole and to approach the work as complementary parts).

- Criem maquetas só com papel antes de passarem ao uso da cor. Abordem o trabalho como sendo realizado / resolvido uma parte de cada vez. Create models using paper only before using color. Approach the work as being done / solved one part at a time.

- Trabalhem sempre partindo de formas básicas, e de seguida tornem tudo mais complexo. Always work with basic shapes first, and then make everything more complex.

A ter em conta | To have in count

- Depois de colarem cuidadosamente os vários elementos, deixem o spread debaixo de uma superfície plana e pesada enquanto seca. After carefully gluing the various elements, leave the spread under a flat and heavy surface while it dries.

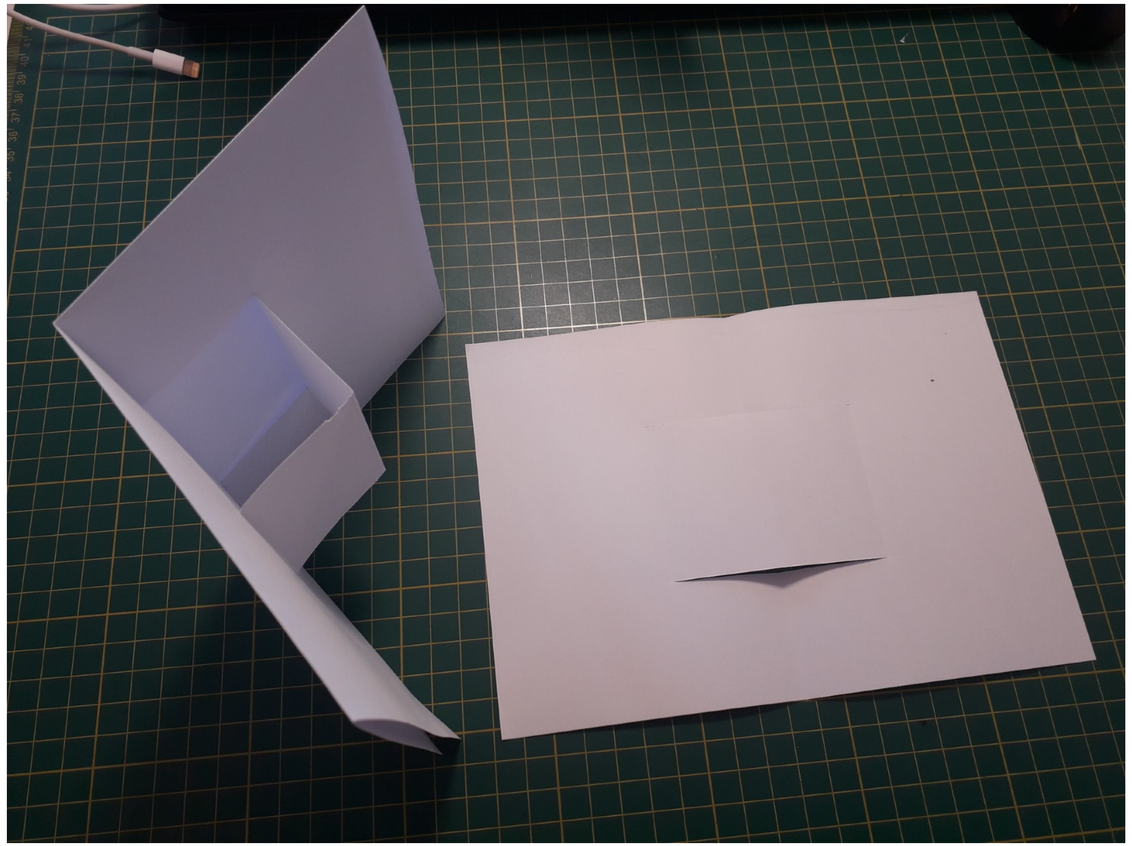
- Enquanto trabalham, façam pausas regularmente e estiquem as mãos. While working, take regular breaks and stretch your hands.

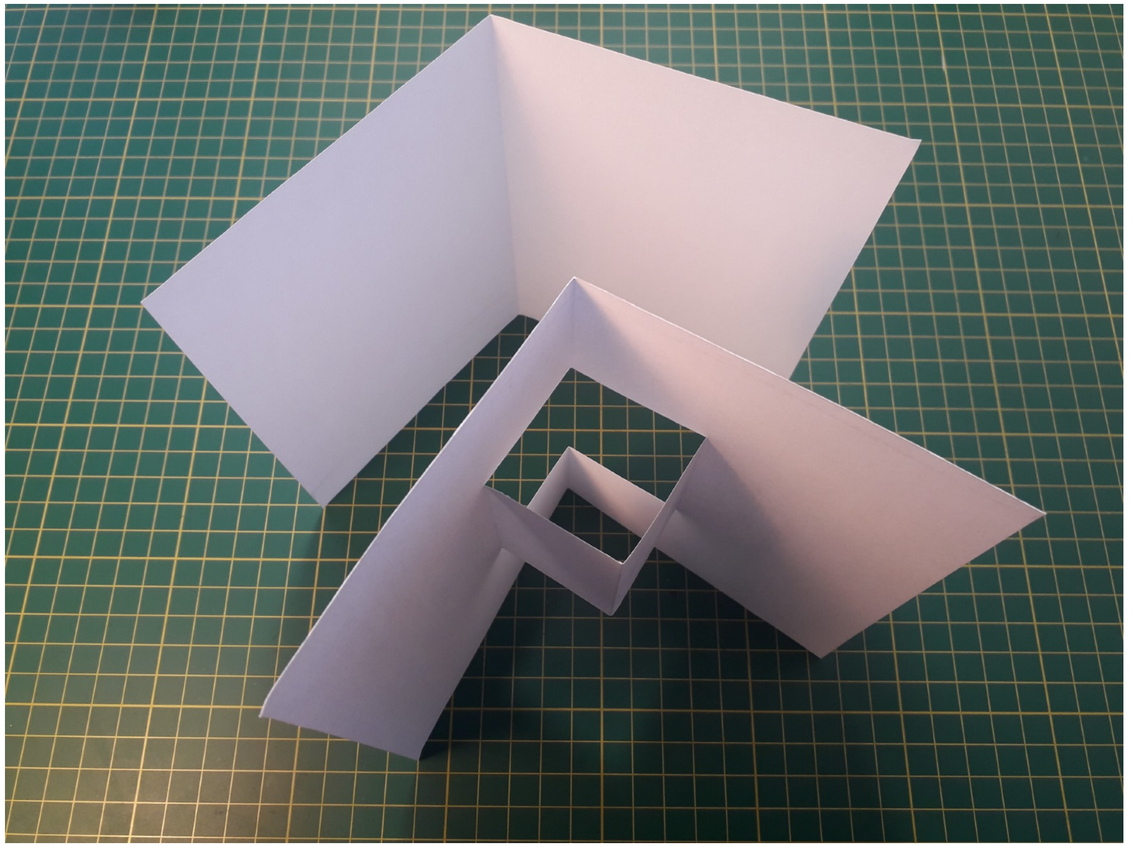
- Parem regularmente, por exemplo a cada 15 minutos para olhar seu trabalho e para verificar a composição. Essa observação vai ajudar a tomarem decisões acerca da imagem, coisas de que não se aperceberam aquando da planificação, adaptações que precisem de ser feitas. Stop regularly, for example, every 15 minutes to look at your work and check the composition. That observation will help you to make decisions about the image, things that you did not realize when planning, adaptations that need to be made.

- Papel: 120 gr +, de preferência. É normal o uso de papel entre 210 e 270 gr, não satinado. Escolham de acordo com o que acessível e (por exemplo) de acordo com o que seja possível usar na impressora a que tenham acesso. Paper: 120 gr +, preferably. It is normal to use paper between 210 and 270 gr, uncoated. Choose according to what is accessible to you and (for example) according to what is possible to use in the printer to which you have access.

- Trabalhar com papel exige paciência. Sejam ponderados. Working with paper requires patience. Be thoughtful.

Sem abas
No flaps



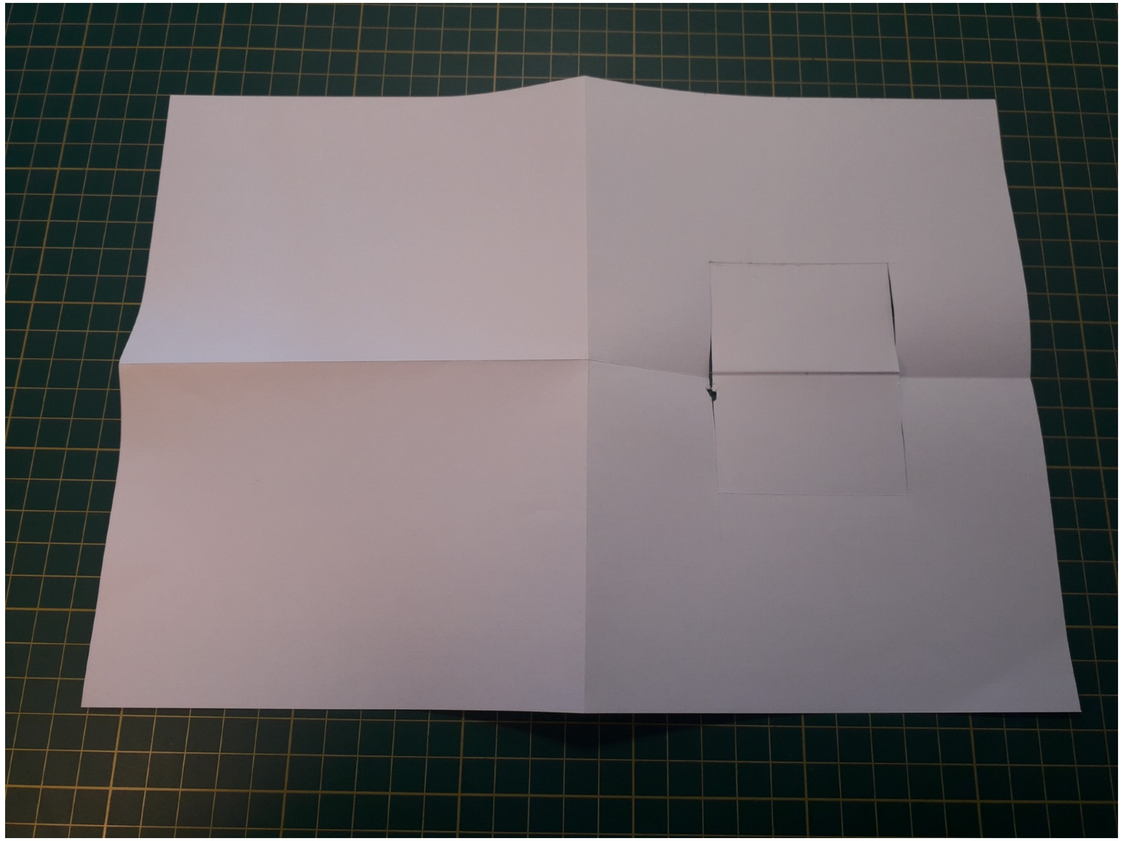


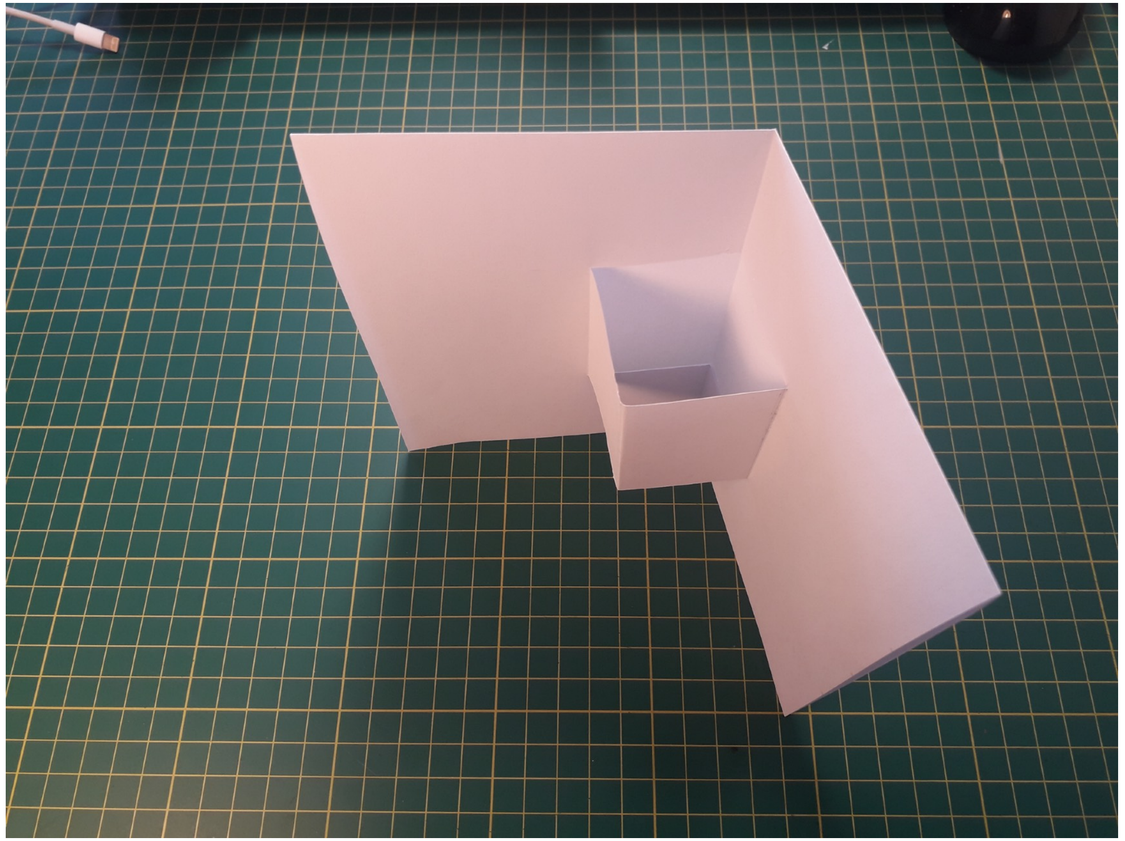
Corte, vinco e dobra
Cut, crease and fold

Planificar (onde colocar a forma)
Planning (where to place the shape)

Planificar (onde cortar, dobrar, colar)
Planning (where to cut, fold, glue)

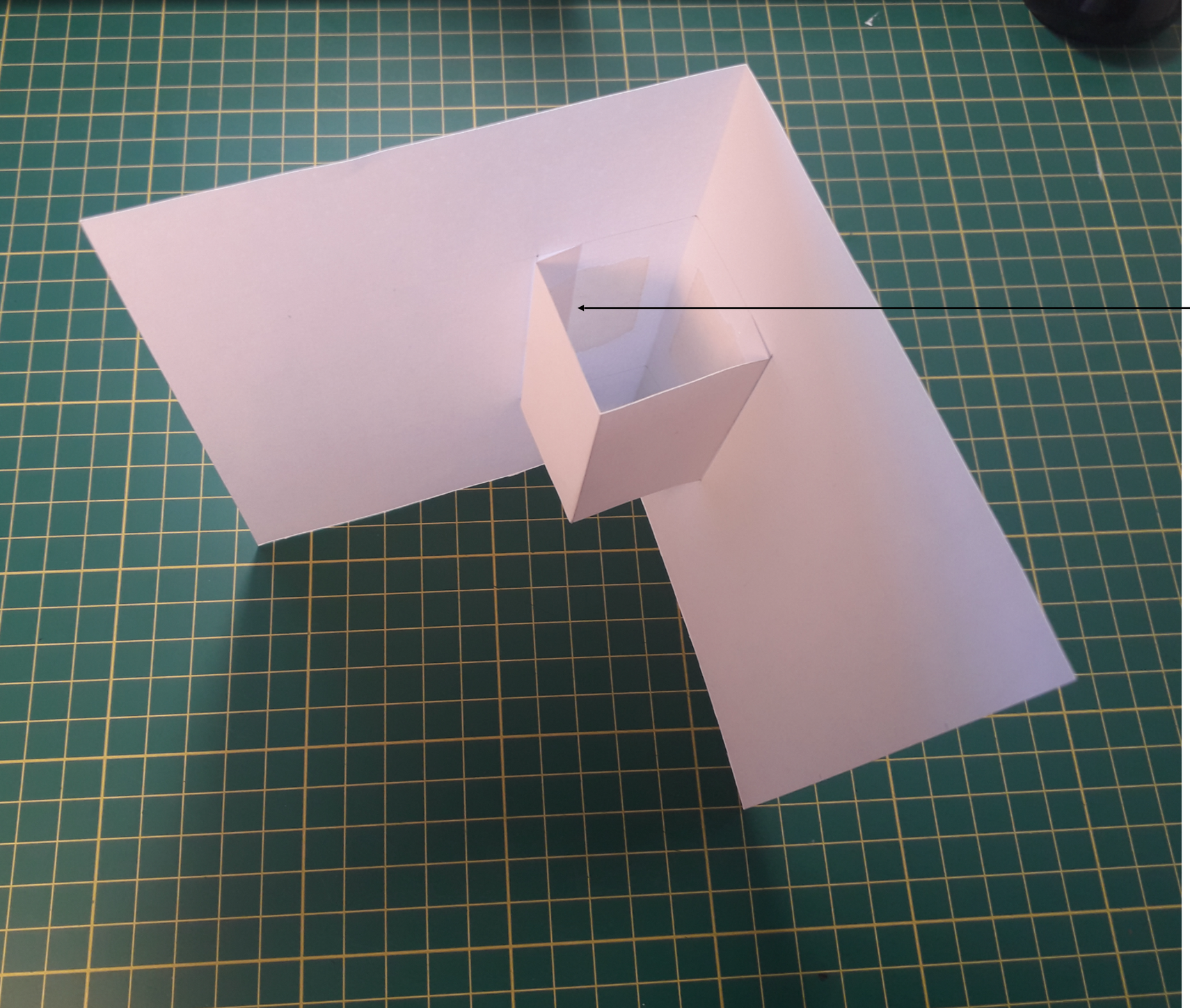
Sem abas
No flaps



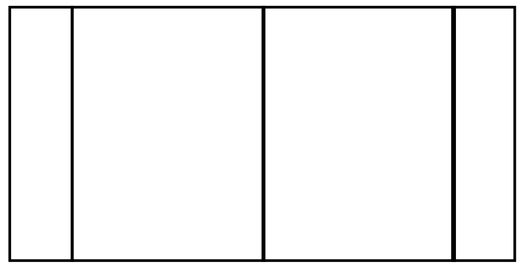


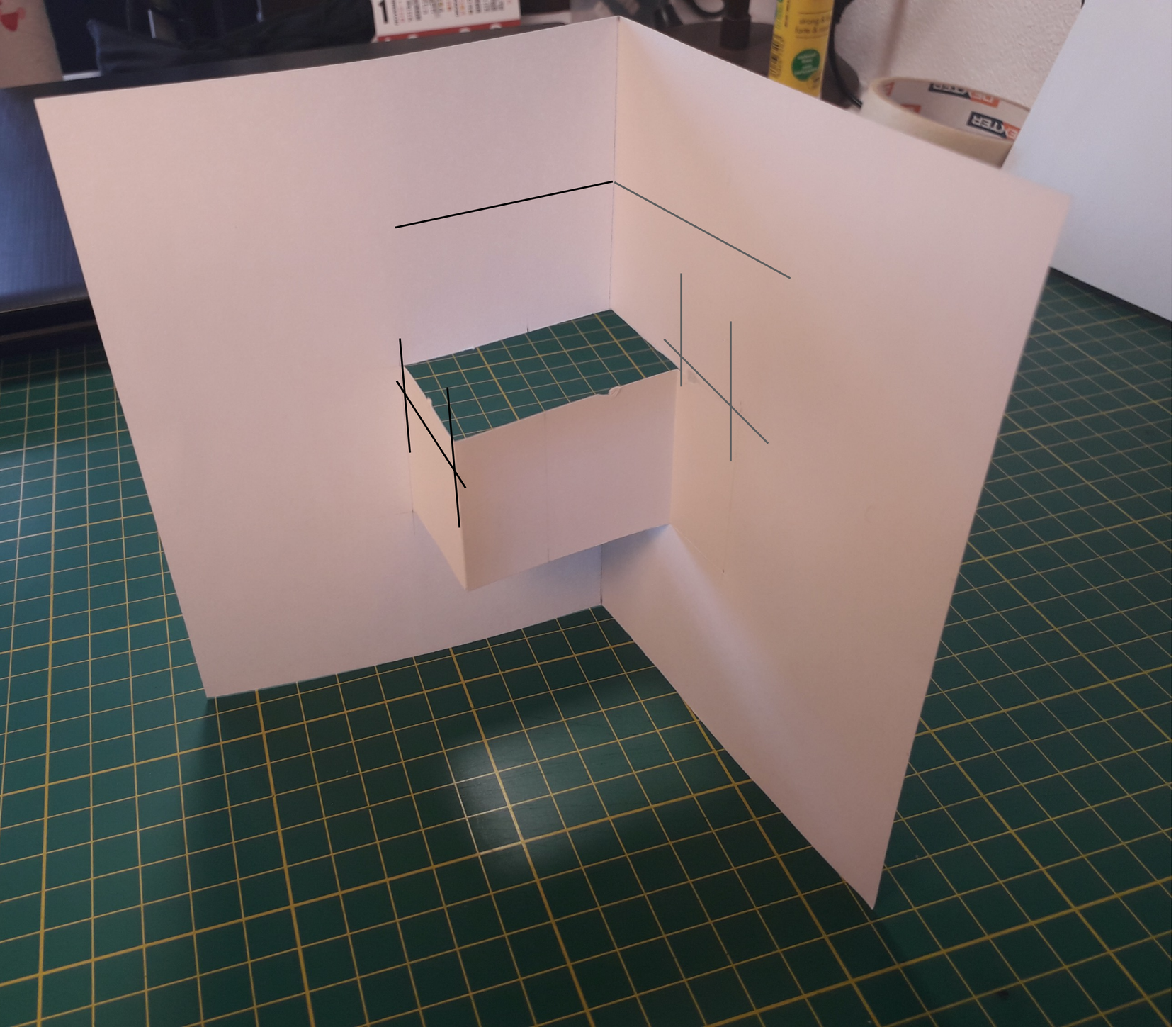
Corte, vinco e dobra
Cut, crease and fold

Capa e interior usando a mesma folha de papel
Cover and interior using the same sheet of paper



Abas
Flaps

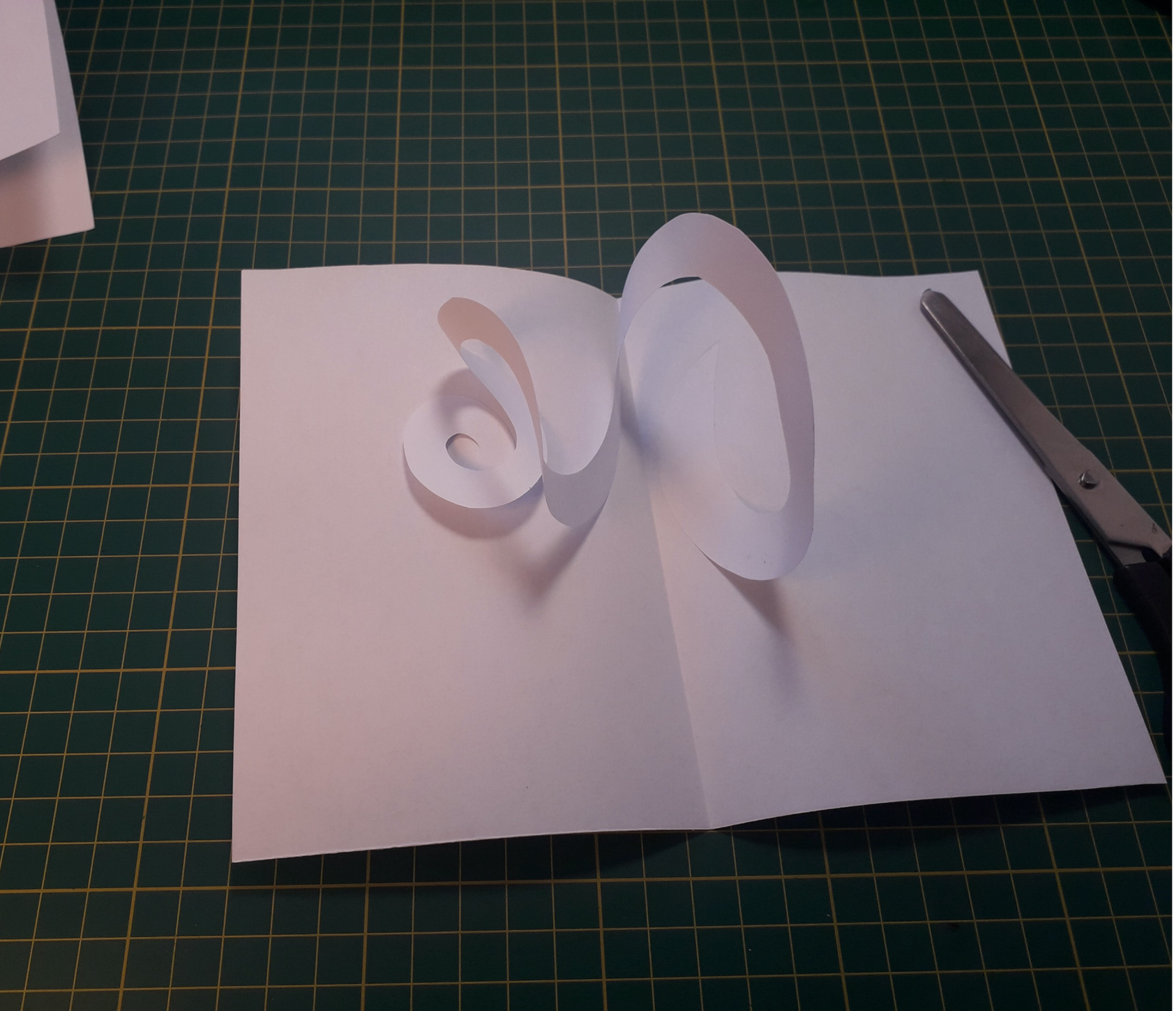


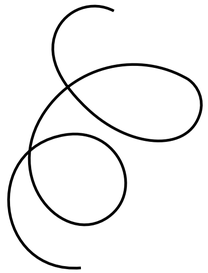


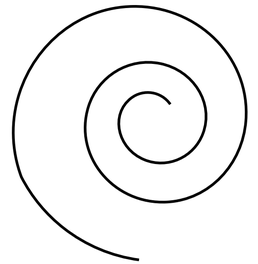
Jogar com diferentes medidas do vinco
Playing with different crease measures

↓

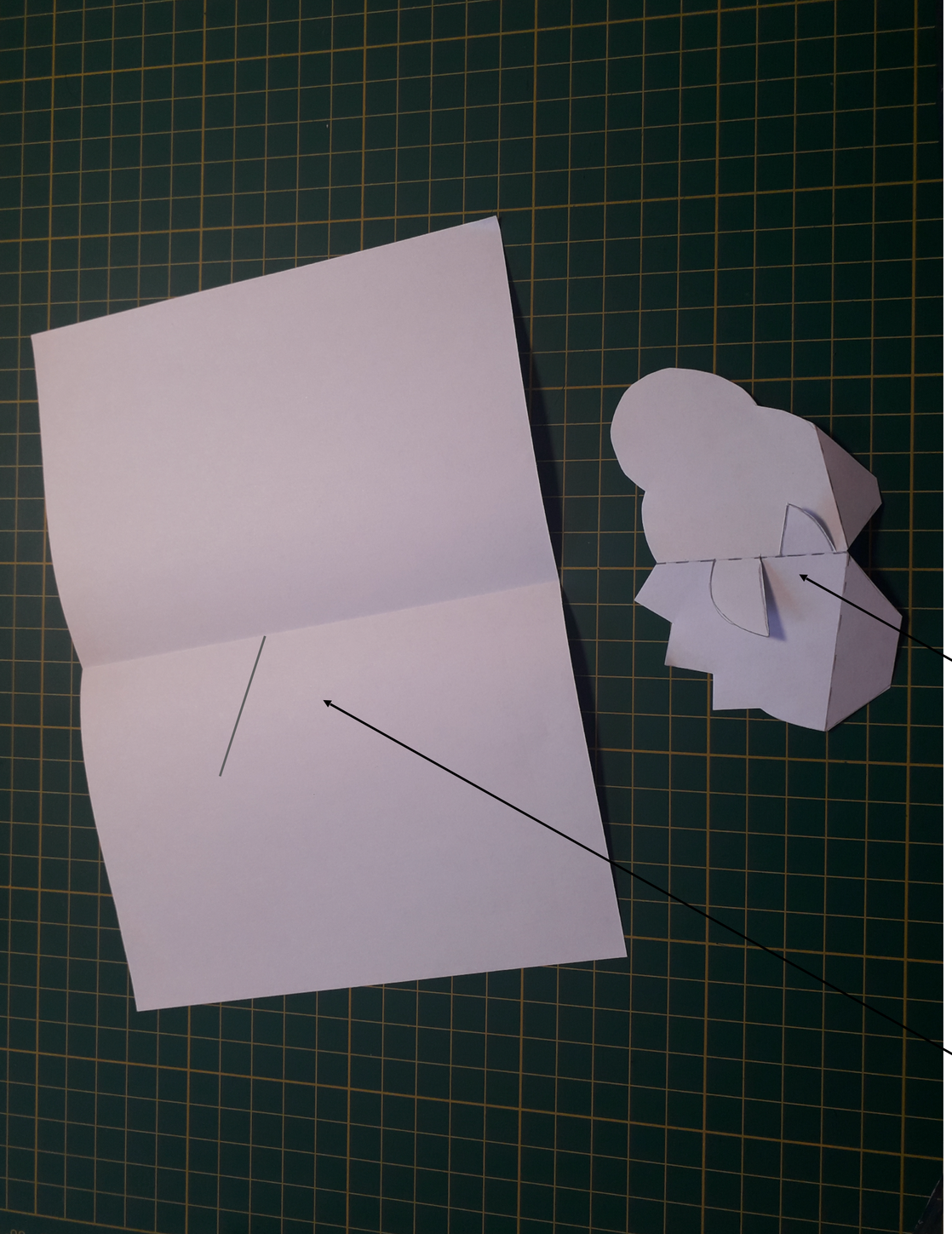
Mudar o sítio do vinco muda a medida do corte
Changing the place of the crease changes the measure of the cut

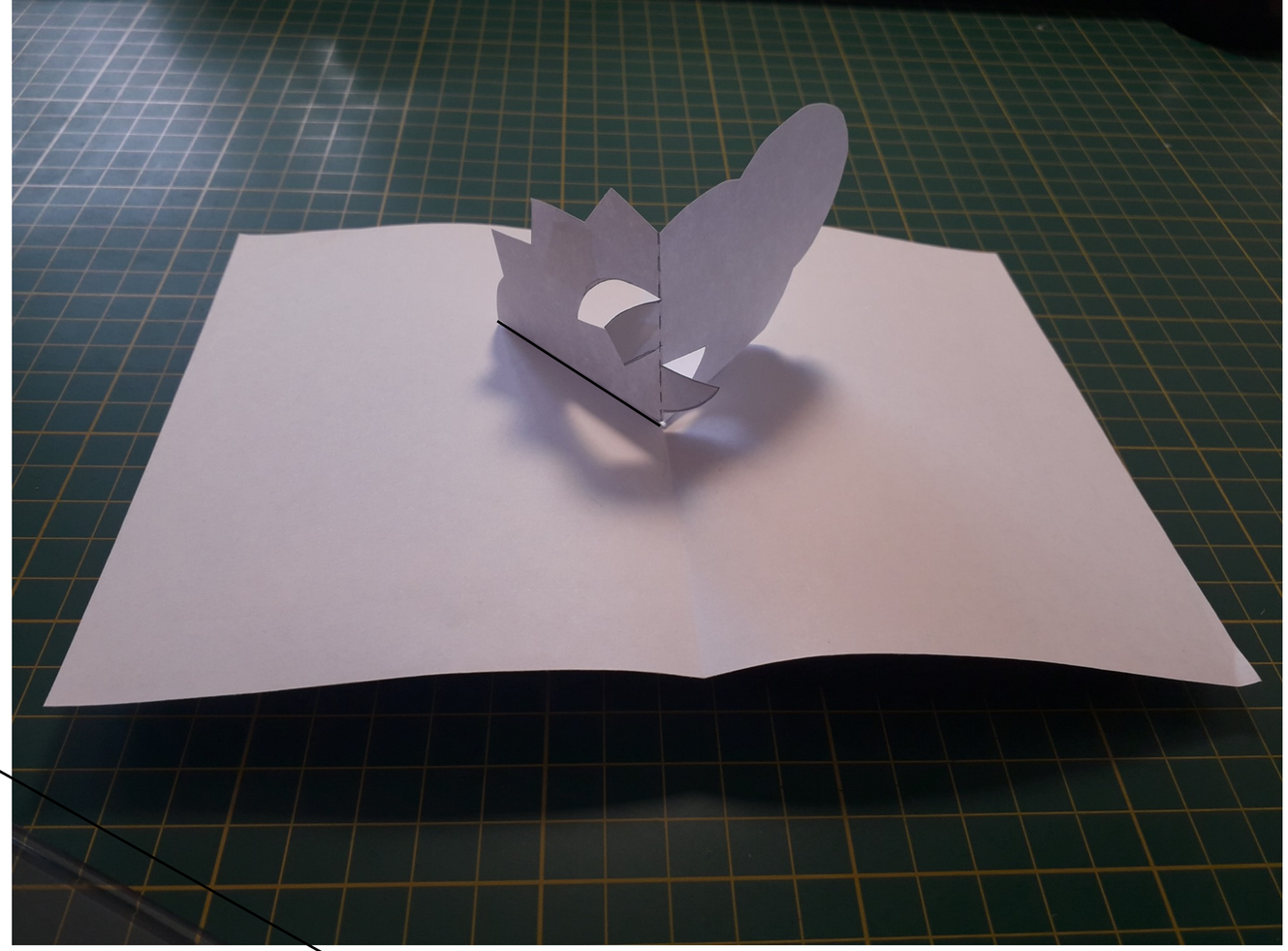






Jogar com diferentes formas que se possam achatar
Playing with different shapes that can be flatten



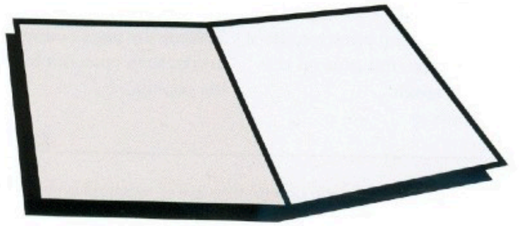


Planificar (onde cortar, dobrar, colar)
Planning (where to cut, fold, glue)

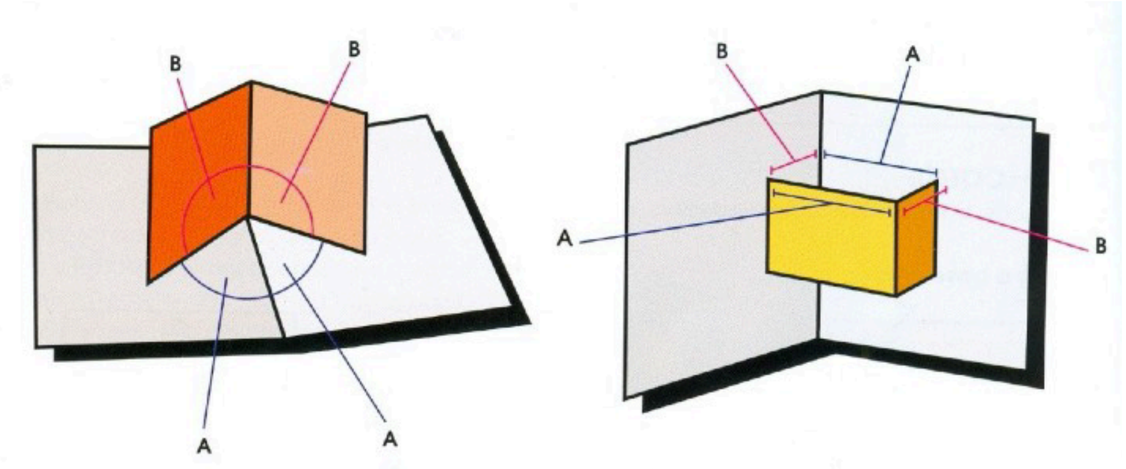
Planificar (onde colocar a forma)
Planning (where to place the shape)

Princípio básico do Pop-up. **Basic principle of Pop-up.**

Para existir um pop-up tem de existir uma dobra.
Every pop-up must span a gully.



Os pop-up têm de estar em equilíbrio em relação à dobra da folha.
Pop-ups must be balanced on each side of the gully.

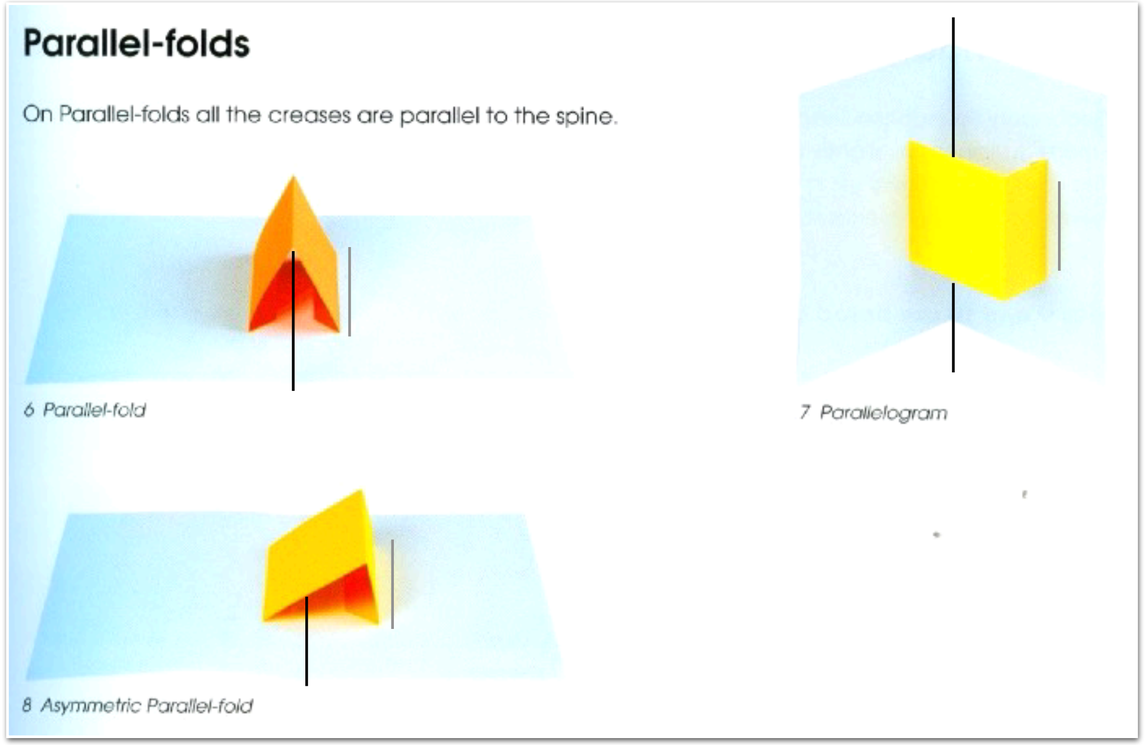


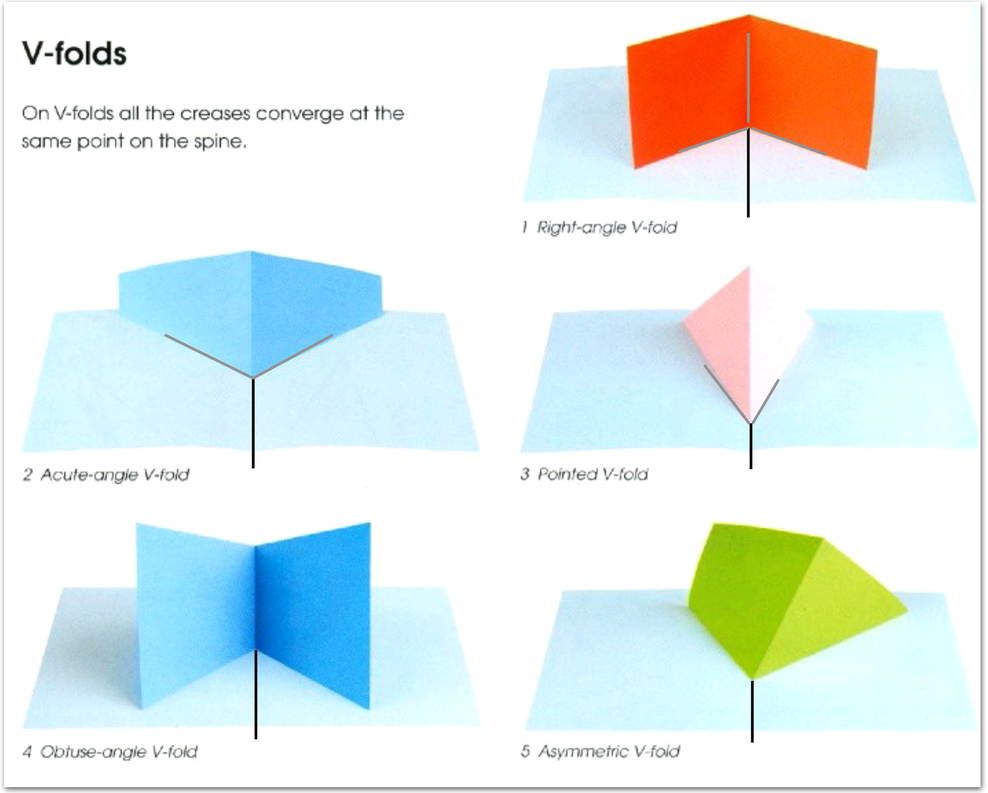
Livro: Pop-Up Designs and Paper Mechanics
Book: Pop-Up Designs and Paper Mechanics

Formas primárias (formas fundamentais) do Pop-up. **Primary foundation shapes of pop-ups.**

Dobra em V.
V fold.

Dobra paralela.
Parallel fold.

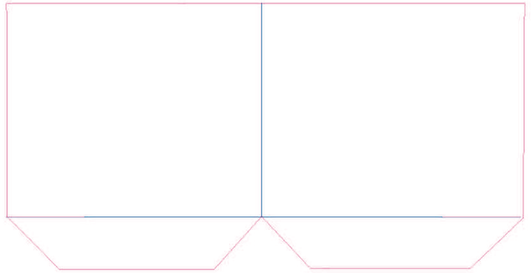




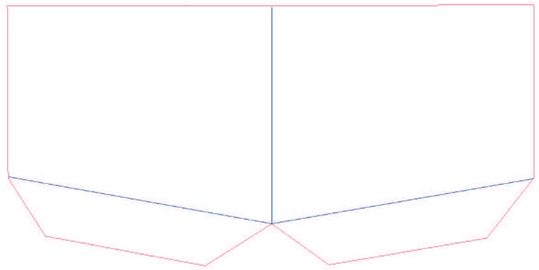
Livro: Pop-Up Designs and Paper Mechanics
Book: Pop-Up Designs and Paper Mechanics

V shapes

MECANISMO EM V



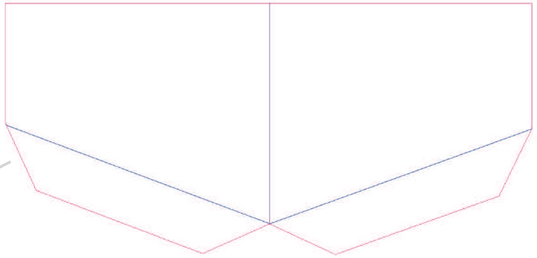
MECANISMO EM V

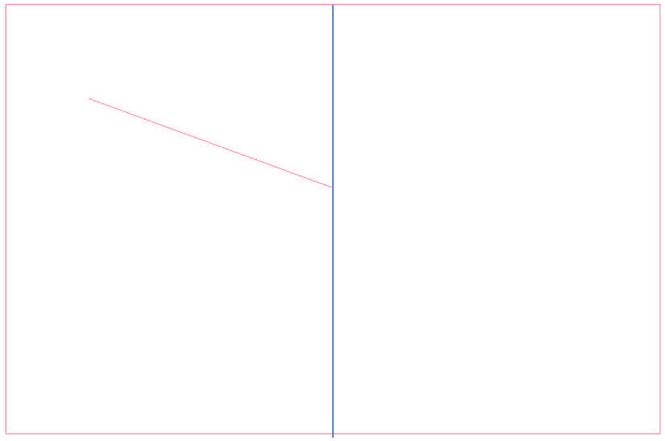


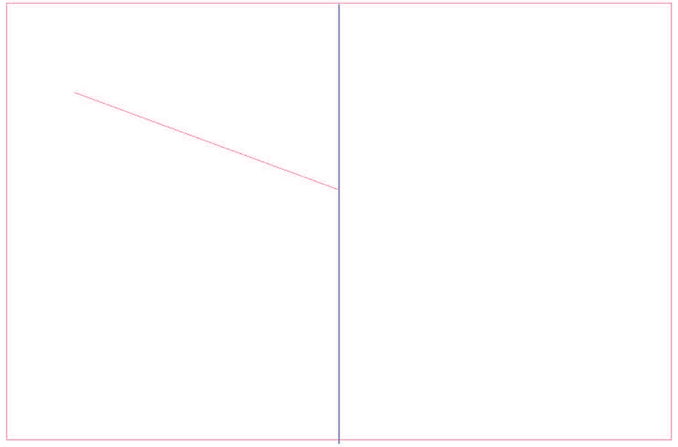
MECANISMO EM V

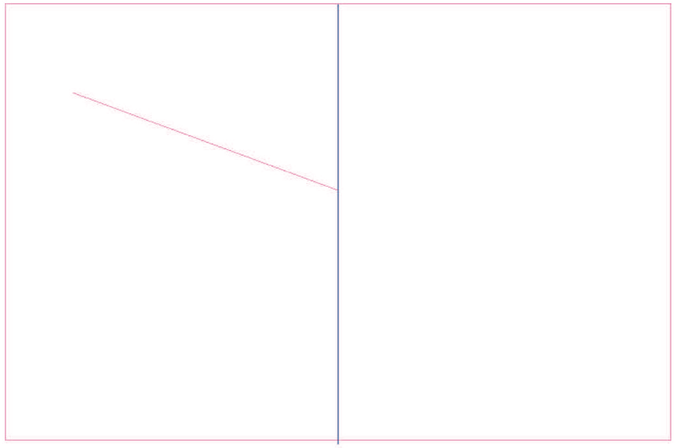
Criem abas

Create flaps









90 GRAUS

80 GRAUS

70 GRAUS

Testar diferentes ângulos **Test with different angles**

Mais importante que o tamanho do pop-up, importa pensar sobre proporcionalidade, pensar sobre as faces do pop-up. More important than the size of the pop-up, it is important to think about proportionality, think about the facets of the pop-up.

Pensar sobre o que vai dobrar. Think about what will fold.

Pensar sobre o que vai ser cortado. Think about what is going to be cut.

Pensar sobre o que vai tem abas e onde serão colocadas. Think about what will have tabs and where they will be placed.

Pensar sobre o que vai colado, e onde. Think about what's going on, and where.

Se, por exemplo, estiverem a usar fita-cola dupla face para colar abas, procure fazer o tamanho das abas na proporção da fita-cola. If, for example, you are using double-sided tape to glue tabs, try to make the size of the tabs in proportion to the tape.

Explorem tridimensionalmente, com folhas de papel, afinem a maqueta e depois façam a planificação correta no computador. Explore three-dimensionally, with sheets of paper, fine-tune the model and then make the correct planning on the computer.

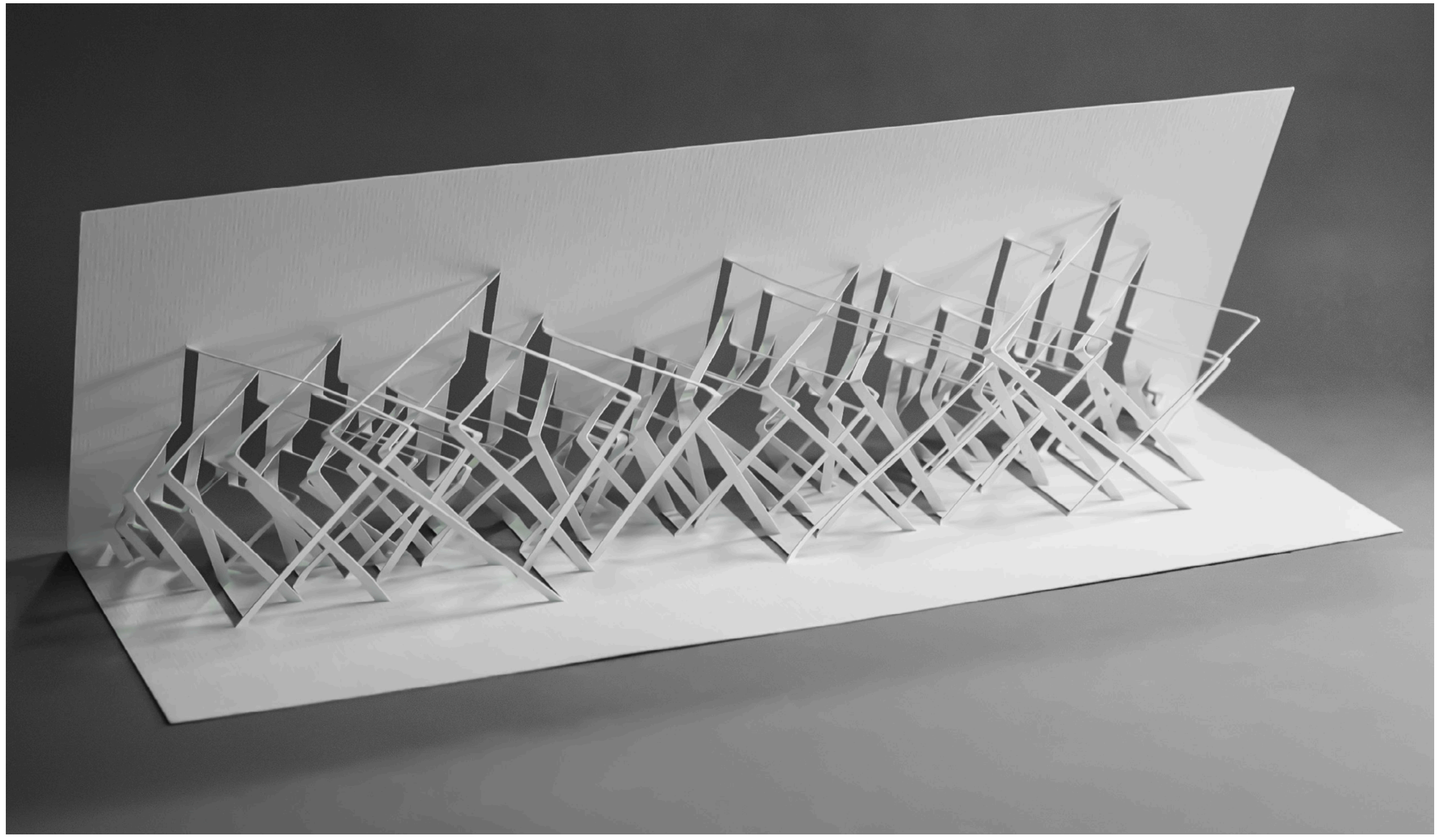
Tutoriais para inspiração. THE POP-UP CHANNEL | Tutorials for inspiration

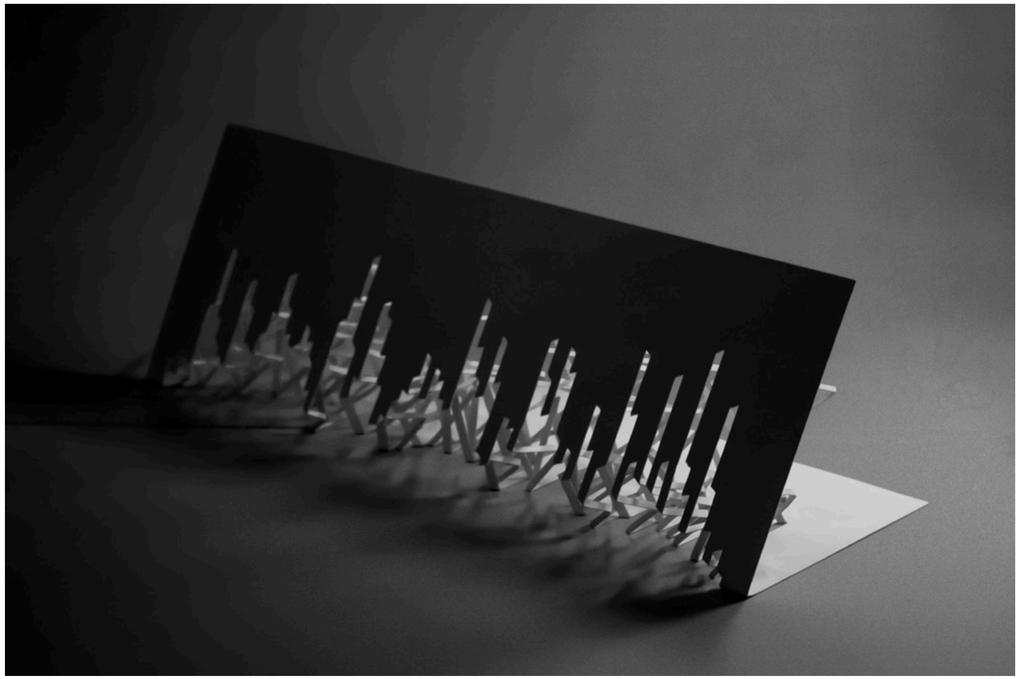
https://www.youtube.com/channel/UCx2M2bGHtXBszG6tuR_NIbQ/videos?view=0&sort=dd&shelf_id=0

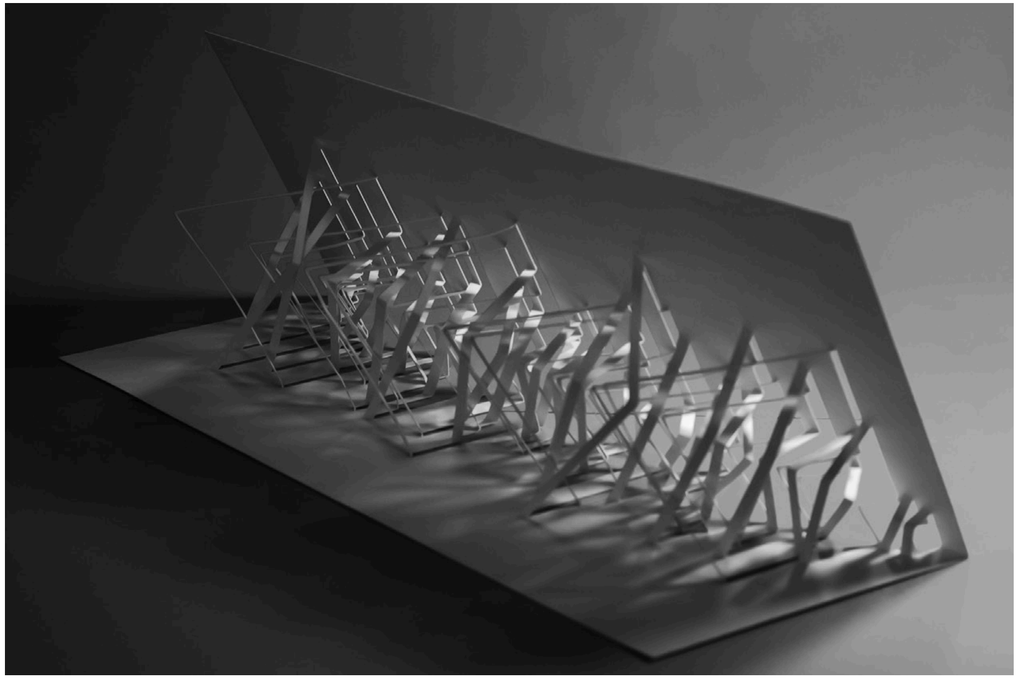
A guide for beginning

https://dandtfordandt.files.wordpress.com/2013/09/ks4-graphics-dg-pop-ups.pdf

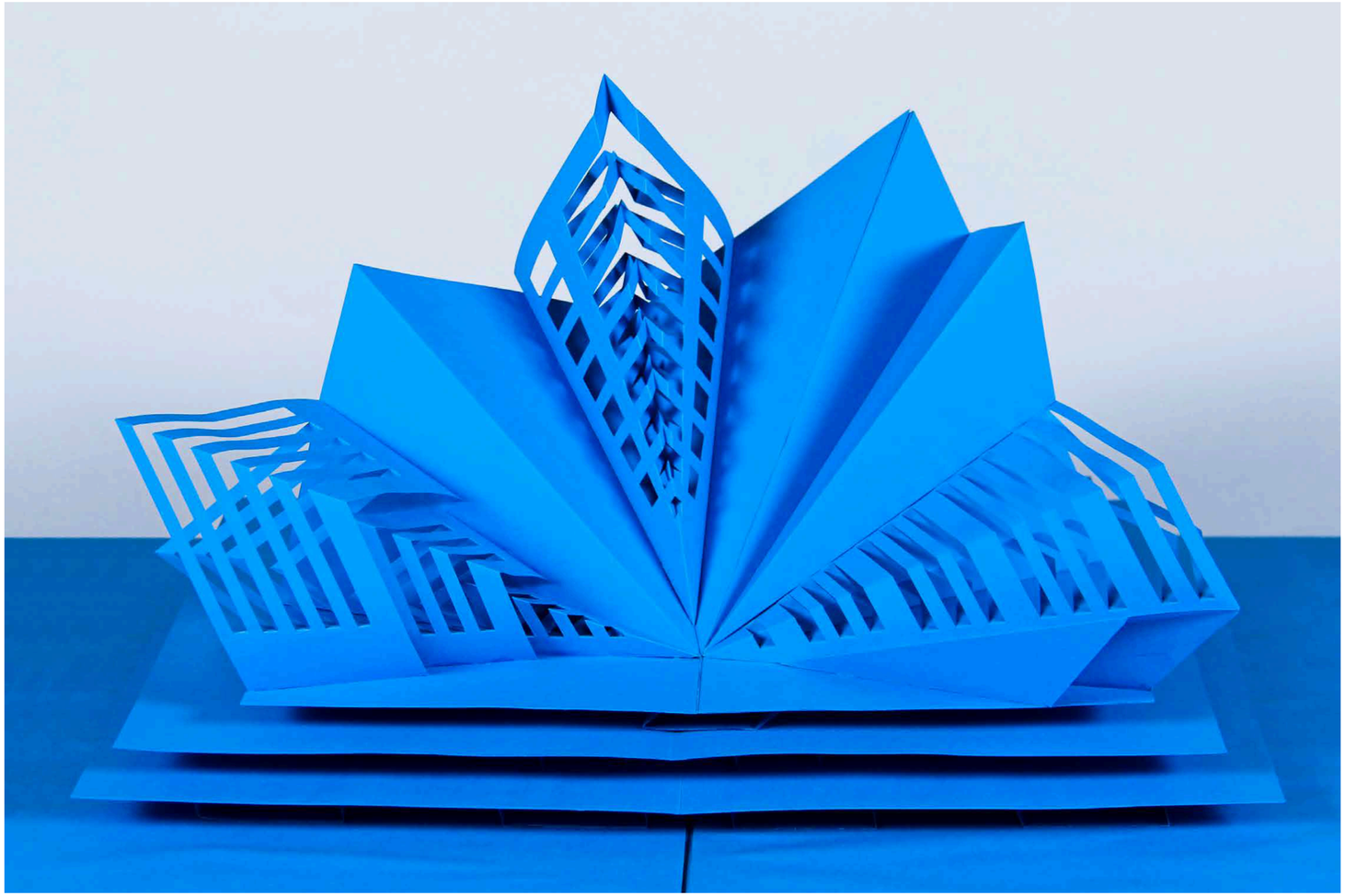
Exemplos - Examples







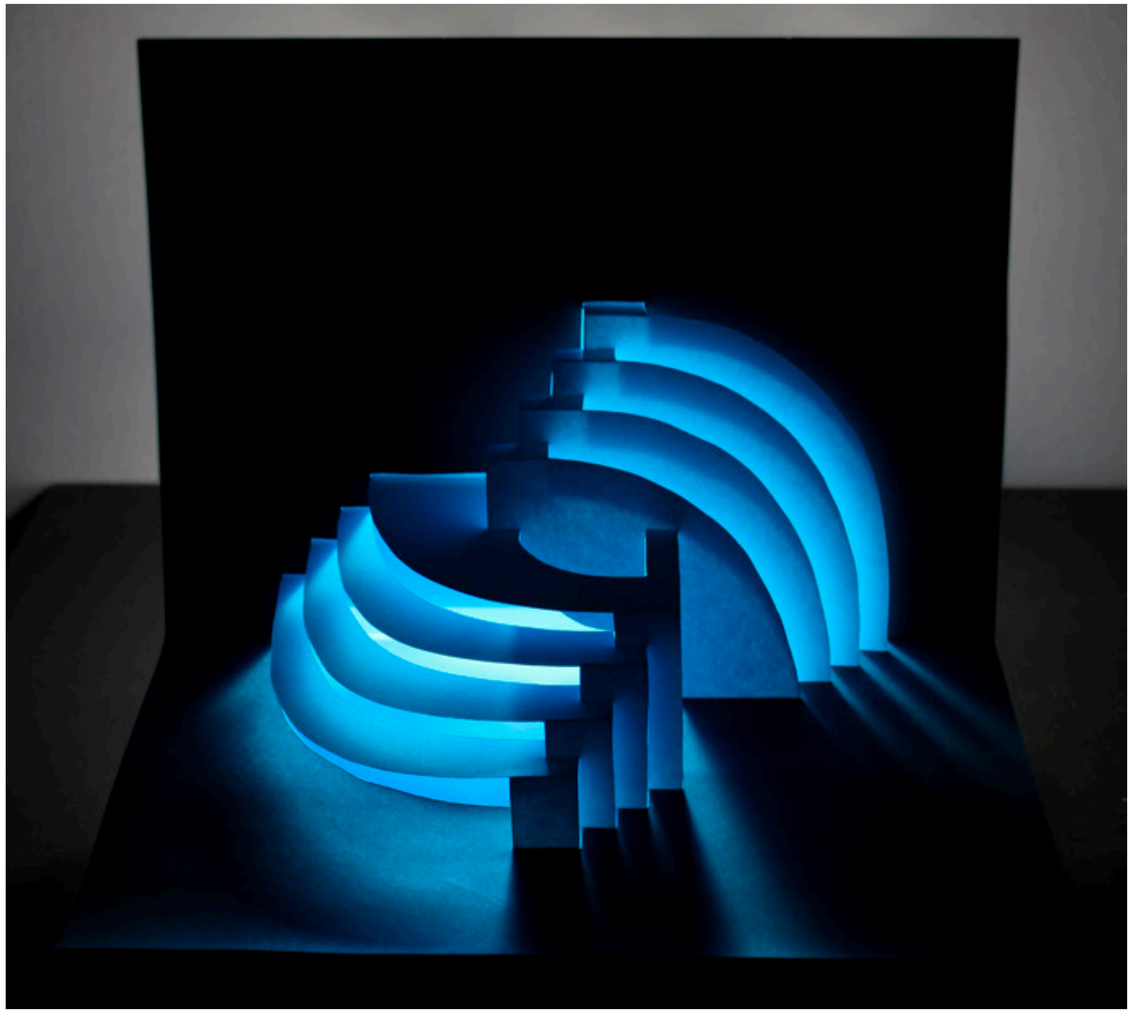
Diana Duarte



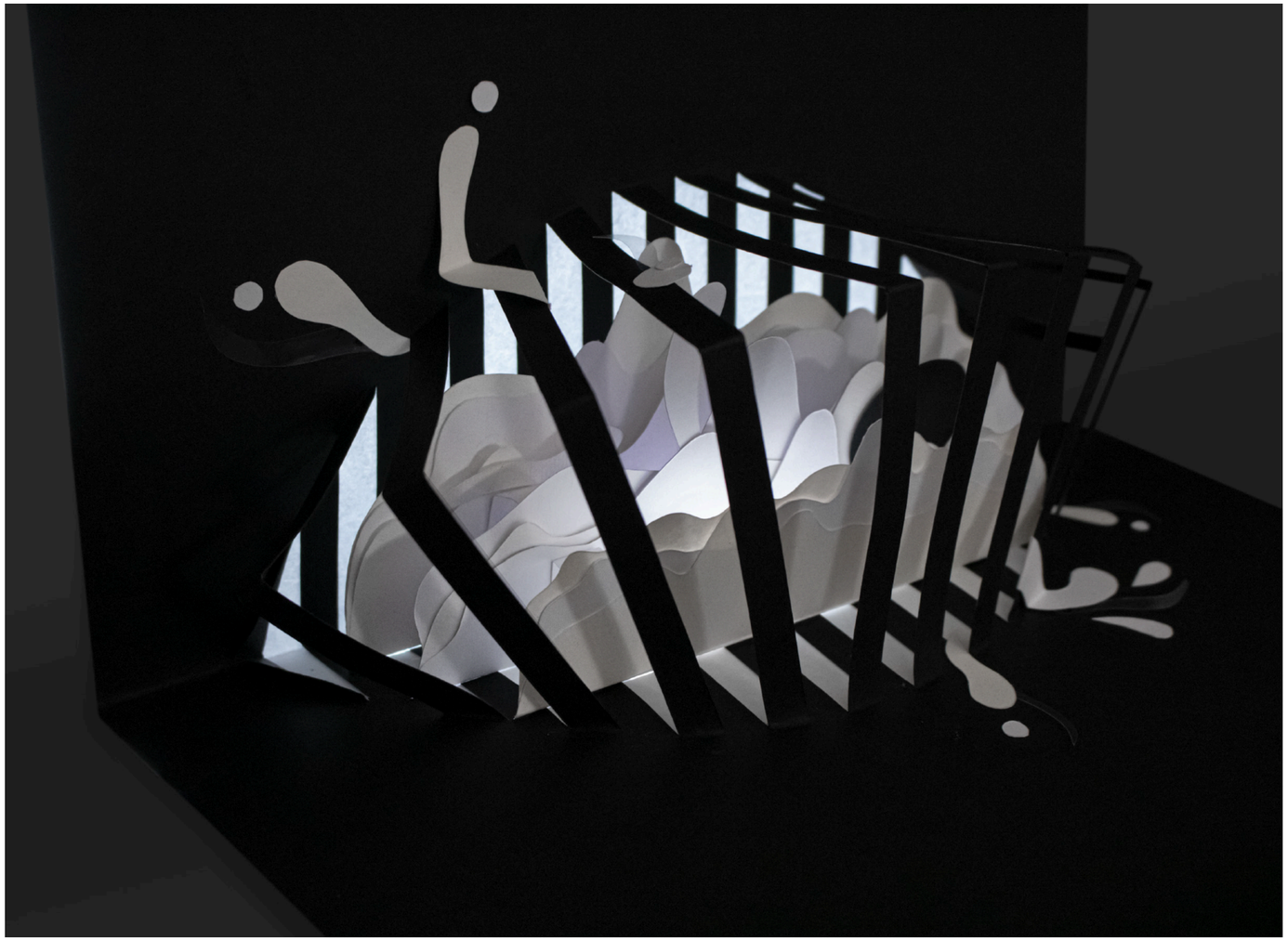


Sidónio Silva

Exemplos - Examples

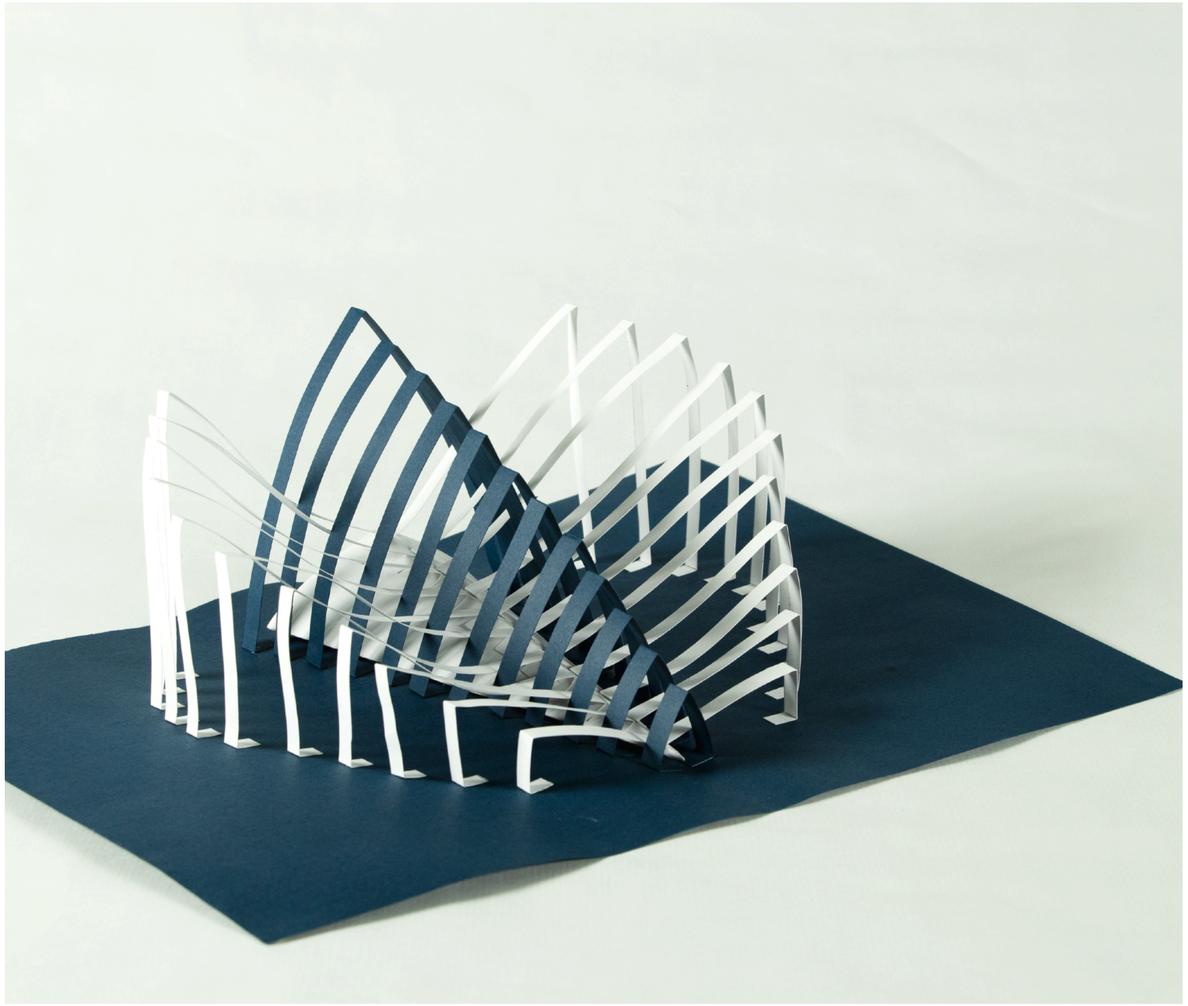


Carlos Casaca



Maiara Gregório

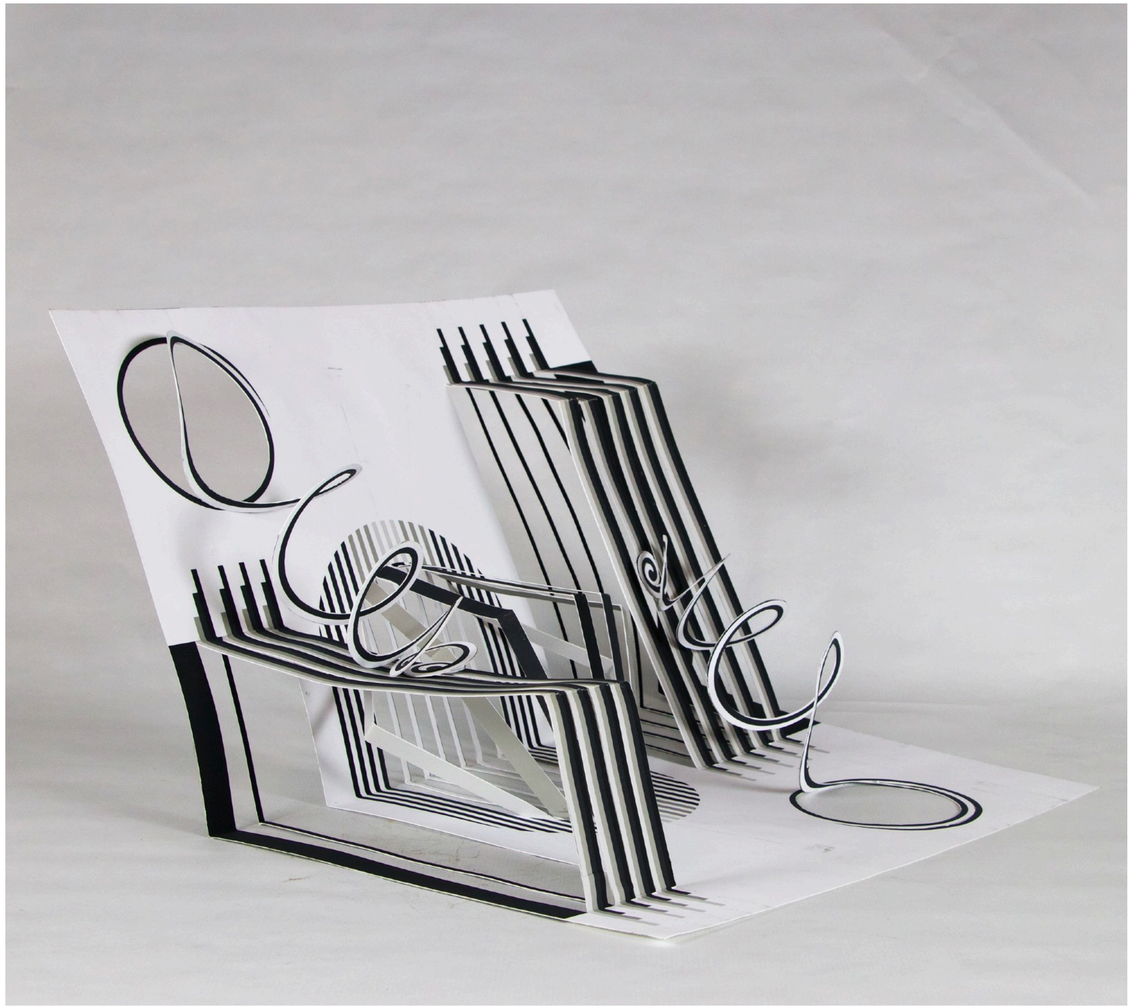
Exemplos - Examples



Andreia Martins



Daniela Fortunato



Fábio Casaleiro



Afonso Santos

Curiosidades | Curiosities

- Ao planificar várias páginas de um livro pop-up, elementos que precisem de ser abertos num ângulo de 180º devem ser colocados nas páginas centrais. When planning several pages of a pop-up book, elements that need to be opened at a 180º angle should be placed on the central pages.

- Ao planificar várias páginas de um livro pop-up, elementos que precisem de maior força para serem levantados devem ser colocados nas primeiro a e/ou última folhas, para que o esforço possa ser suportado pela folha mais rígida (ou de cartão) da capa. When planning several pages of a pop-up book, elements that need greater strength to be lifted must be placed on the first and / or last sheets, so that the effort can be supported by the more rigid sheet (or cardboard) of the cover.

- Elementos de recortes (Kirigami) ou elementos com pegas devem ocupar folhas que consigam ter um bom suporte. Cutout elements (Kirigami) or elements with handles must occupy sheets that can have a good support.

nuno.marques@ipleiria.pt

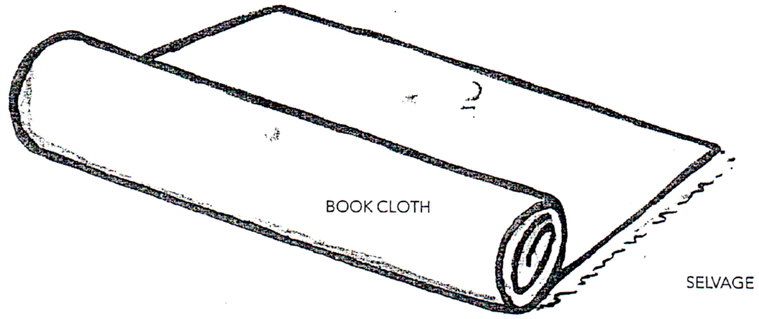
Curiosidades | Curiosities

- O grão do papel. The grain of the paper.

DETERMINING THE GRAIN

ANOTHER IMPORTANT CONSIDERATION in book and box making is the grain. The grain of a tree runs up and down, perpendicular to the ground. The same holds true when constructing a book: the grain should be parallel to the spine to give it strength and continuity. The materials fold, cut, and tear easiest along the grain.

Most bookbinding materials have a grain. Since the majority of these materials are machine milled, the grain is consistent with each product. The grain is determined by the direction in which the paper fibers are aligned or pulled. Handmade paper is pulled with a screen straight up from a vat of pulp suspended in water, rather than run along in one continuous direction. So, handmade paper does not have a discernable grain.



Check all of the materials before cutting or gluing for the proper grain direction. For book cloth, the grain is typically parallel to the selvage, or outer edge, of the cloth. This is counterintuitive, because when purchasing the cloth it is typically rolled cross-grain and cut by the yard or meter. Opposing grain directions when gluing causes irregular warping and is a big no-no in book and box making. Below are four different methods for testing the grain direction.

TIP Even computer and copy paper have a grain and should be checked before construction. Using tabloid (11" × 17" [27.9 × 43.2 cm]) size paper is often easier and gives more options when folding, compared to the letter sheet size of 8½" × 11" (21.6 × 27.9 cm).

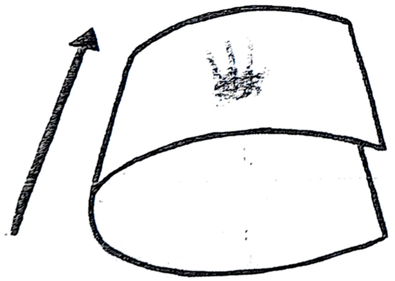
Livro: Books & Boxes
Book: Books & Boxes

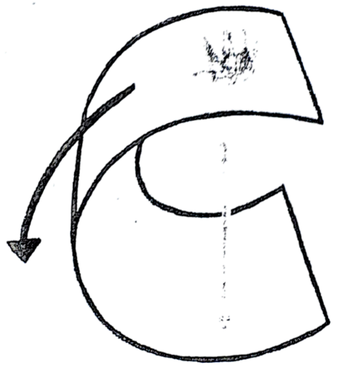
Curiosidades | Curiosities

- Testar a direção do grão. Testing the grain direction.

METHOD I ▼

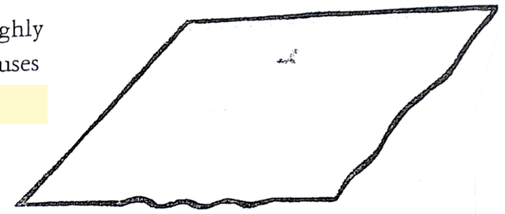
The most effective and least damaging way to check the paper, board, and cloth grain is to slightly bend or roll over the material. With a consistent amount of pressure, bounce the material in one direction on a flat surface. Then turn the material 90 degrees. Roll it over and bounce with the same amount of pressure in the new direction. The direction that has the most give is the direction of the grain. Picture that the material is being wrapped around a tree trunk, where the grain is parallel to the tree.





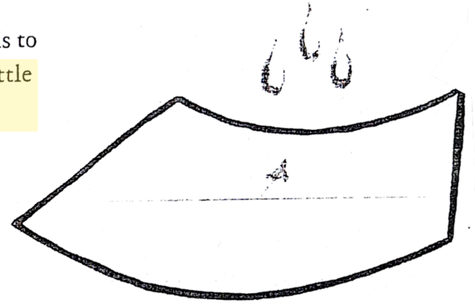
METHOD II ▶

Pinching the paper or cloth roughly along the two adjacent edges causes a heavier ripple in the direction of the grain, but damages the surface. This method does not work for the binder's board.



METHOD III ▶

Another way to check the grain is to wet the material with a spray bottle and see which way the material naturally bows or curls. If this method is chosen the material should be dried and flattened before gluing or folding. Be warned, this may permanently damage some materials.



METHOD IV ▶

If the grain is still difficult to discern, many papers have a watermark or embossment on the paper surface. When held up to a light, the sheet reveals a slightly transparent name or paper company logo. The grain runs parallel to this watermark. Most artists and writers avoid the watermark because it may become more prominent when printing or using surface treatments.



Livro: Books & Boxes
Book: Books & Boxes

Curiosidades | Curiosities

Grão: a direção na qual a maioria das fibras fica numa folha de papel acabada é conhecida como granulação. As fibras fluem paralelamente à direção em que o papel viaja na máquina de papel durante a fabricação.
O grão pode influenciar outras características do papel. Papel de gramatura mais alta, como capa e bristol, pode ser dobrado sem deixar marcas quando dobrado paralelamente ao grão; será necessário usar um vincador, no entanto, ao dobrar ao longo do grão.
Existem duas classificações básicas de grão: grão longo e grão curto. Granulação longa indica que a granulação do papel é paralela às medidas mais longas da folha. As fibras são alinhadas paralelamente ao comprimento da folha. Por outro lado, a fibra curta indica que a fibra do papel segue em ângulos retos na dimensão mais longa da folha. O alinhamento das fibras no papel com fibra curta é paralelo ao menor da folha. (Dos princípios básicos da compra de papel)

Grain: The direction in which most fibers are on a finished sheet of paper is known as grain. The fibers flow parallel to the direction in which the paper travels in the paper machine during manufacture.
The grain can influence other characteristics of the paper. Higher paper weight, such as cover and bristol, can fold without marks when folded parallel to the grain; punctuation will be required, however, when doubling over the grain. There are two basic classifications of grain: long grain and short grain. Long grain indicates that the grain of the paper is parallel to the longest measurements on the sheet. The fibers are aligned parallel to the length of the sheet. On the other hand, the short fiber indicates that the paper fiber follows at right angles in the longest dimension of the sheet. The alignment of the fibers in the short grain paper is parallel to the smallest of the sheet. (From the basic principles of paper buying)

Papel Paper

CARACTERÍSTICAS DO PAPEL

FÍSICAS
RASGO / RESISTÊNCIA À TRAÇÃO
A resistência à tração é a capacidade do papel de resistir ao rasgo quando uma carga de tração (uma carga paralela ao papel) é aplicada. O papel é colocado num testador de tração padrão, onde uma borda de uma tira de papel de teste de 6 cm de largura é presa em uma braçadeira fixa, enquanto a outra extremidade é presa em uma braçadeira móvel. Um corte inicial é aplicado ao papel. Os grampos são afastados causando uma carga de tensão no papel, até que ele se rasgue e a força em kg seja registrada. A resistência ao rasgo é medida perpendicularmente ao plano do papel.

RESISTÊNCIA HÚMIDA
Resistência húmida é a capacidade do papel de reter sua resistência à tração quando saturado com água. O papel que pode reter 15% de sua resistência à tração a seco quando húmido é considerado como tendo "boa resistência à humidade", enquanto os papéis que retêm cerca de 50% de sua resistência à tração a seco são considerados "superiores".

RESISTÊNCIA À DOBRA
A dobrabilidade é a capacidade do papel de manter sua resistência à tração quando dobrado para frente e para trás sob uma carga de tração. A medição é o número de dobras antes da falha. A resistência à dobra geralmente é melhorada com fibras de papel mais longas, e maior densidade.

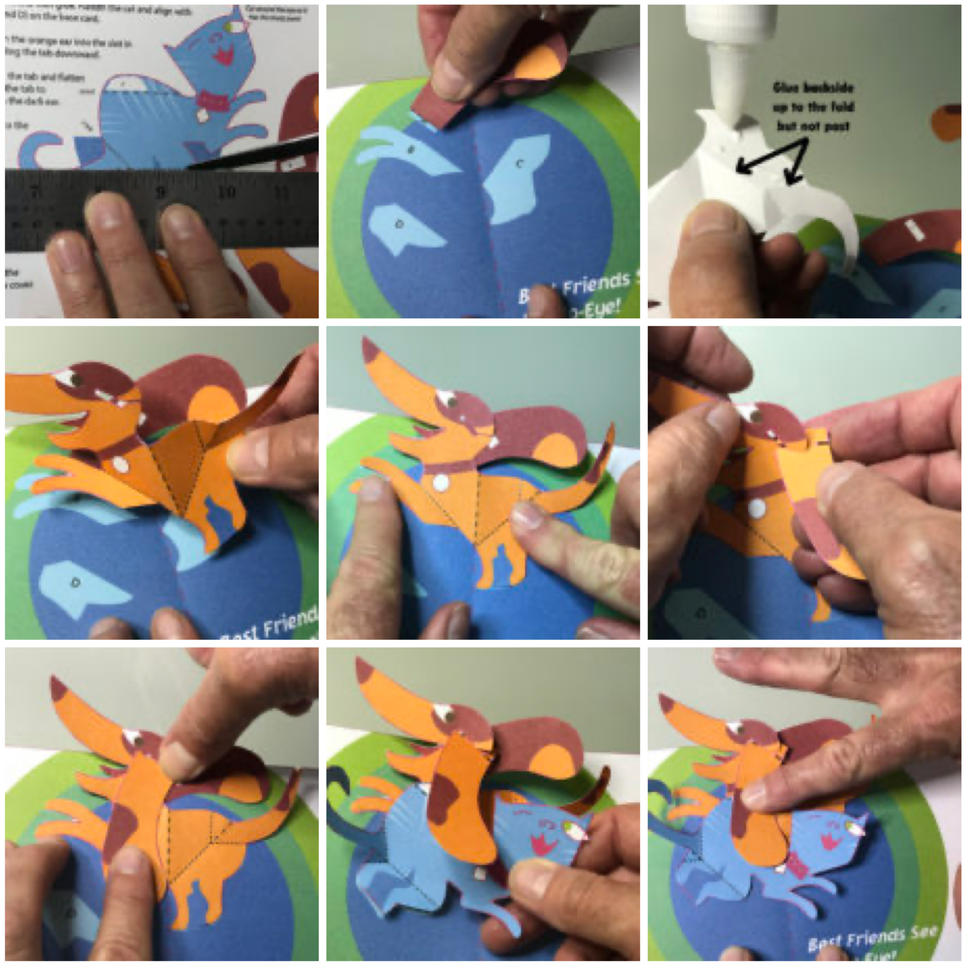
FORÇA DE EXPLOSÃO
A resistência à ruptura está relacionada à resistência à tração e à orientação da fibra. É um teste da capacidade do papel de resistir ao estouro quando colocado sob a pressão de um diafragma. No teste de Mullen, a amostra de papel é presa com um anel sobre um diafragma colapsado, que é então preenchido com óleo, até que o papel se rompa. A medição está relacionada à pressão aplicada ao diafragma no momento do estouro.

PAPER CHARACTERISTICS

PHYSICAL
TEAR / TENSILE STRENGTH
Tensile strength is the paper's ability to resist tearing when a tensile load (a load parallel to the paper) is applied. The paper is placed in a standard tensile tester, where one edge of a 6 cm wide test paper strip is attached to a fixed clamp, while the other end is attached to a movable clamp. An initial cut is applied to the paper. The clamps are pulled apart causing a load of tension on the paper, until it tears and the force in kg is recorded. Tear resistance is measured perpendicular to the paper plane.

WET STRENGTH
Wet strength is the paper's ability to retain its tensile strength when saturated with water. Paper that can retain 15% of its dry tensile strength when wet is considered to have "good moisture resistance", while papers that retain about 50% of its dry tensile strength are considered "superior".

FOLDING RESISTANCE
Foldability is the paper's ability to maintain its tensile strength when folded back and forth under a tensile load. The measurement is the number of folds before failure. Bending resistance is generally improved with longer paper fibers, and higher density.
EXPLOSION FORCE
The tensile strength is related to the tensile strength and orientation of the fiber. It is a test of the paper's ability to resist bursting when placed under pressure from a diaphragm. In the Mullen test, the paper sample is attached with a ring over a collapsed diaphragm, which is then filled with oil, until the paper breaks. The measurement is related to the pressure applied to the diaphragm at the time of the burst.



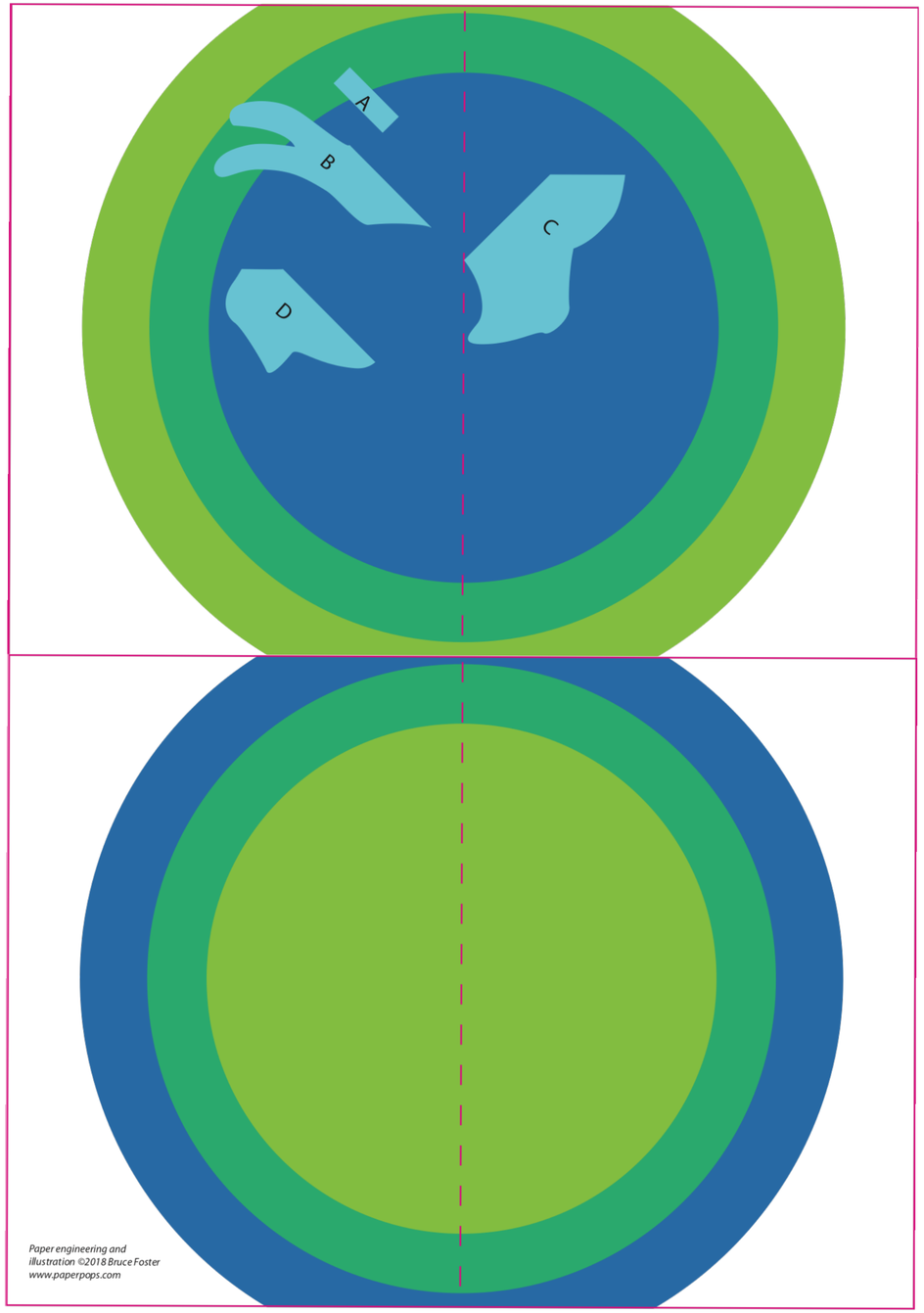
Best Friends pop-up workshop

print dog and cat.pdf

You will need two sheets of 8.5 x 11 cover weight paper to print the pop up. Cut out your four pieces and the two covers along the red outer lines. Do NOT cut any dotted line.

1. Score each dotted line. Try to be exactly ON the dotted lines when placing your score tool.
2. Bend down the tab on the dark dog's ear, glue and place to the A shape on the card.
3. Bend the dog into shape, paying attention to the Mountain and Valley folds. Glue the backside of the Dog's feet. Not too much! Just enough to smooth the glue out TO and not beyond the folded lines. When gluing this pop, all elements should be flat to the table. The pop up will form later!
4. Place the dog's feet onto the B and C shapes on the card. The dog's middle dotted line should line up EXACTLY with the fold in the card.
5. When placed, the dog will be flattened. Press and hold a moment.
6. Insert the orange dog ear into the slit, bending the tab downward.
7. Glue the bent tab and flatten the pop again, holding to dry
8. Bend tabs on cat, glue backside of cats feet as before with dog, place onto the D shape
9. Glue tab on top of cat's back, allowing orange dog ear to glue down to the cat with all pieces flattened.
10. Carefully fold the card. Open to see the pop up!

Treino | Training



Paper engineering and
illustration ©2018 Bruce Foster
www.paperpops.com

Best Friends Pop-Up: *Print on 2 sheets of thick or cover weight paper.*

1. Before cutting shapes out, score the dotted lines (on the base sheets too) by placing a straight edge like a ruler along the dotted lines and rub a scoring object along the ruler, thereby"denting" the dotted lines. Scoring objects can be a paper clip, a dull butter knife or picnic knife, or even your finger nail...

2. Using scissors cut out each of the four shapes along the red lines or edges. Be careful NOT to cut ANY dotted score lines! Carefully cut and remove the square slot and angled line in the dog's head.

3. Cut out the base sheet and the cover sheet along the red rectangle(s)

4. Bend each piece along the dotted lines, noting Valley folds (short dashes) vs Mountain folds (long dashes). Note at points along the line, a fold *can* reverse and turn into the other kind.

A Valley fold makes a "v" so the dotted line is pushed INward. A Mountain fold rises like a mountain peak, so the dotted line is the high point and comes forward.

5. Place a small amount of Elmer's glue on the tab of the dark ear and place directly on the A spot on the base card.

6. Glue the backsides of the leg shapes of the dog, spreading the glue lightly to, but not beyond the folds. Flatten the dog back out and align with the leg shapes on the base (B). Be careful that the middle dotted line lines up with the gutter score on the base card.

Visit www.paperpops.com/dog-cat for a visual assembly guide.

7. Lightly glue the backsides of the cat's feet, being careful to not cross any dotted line. Flatten the cat and align with the feet shapes on the base card.

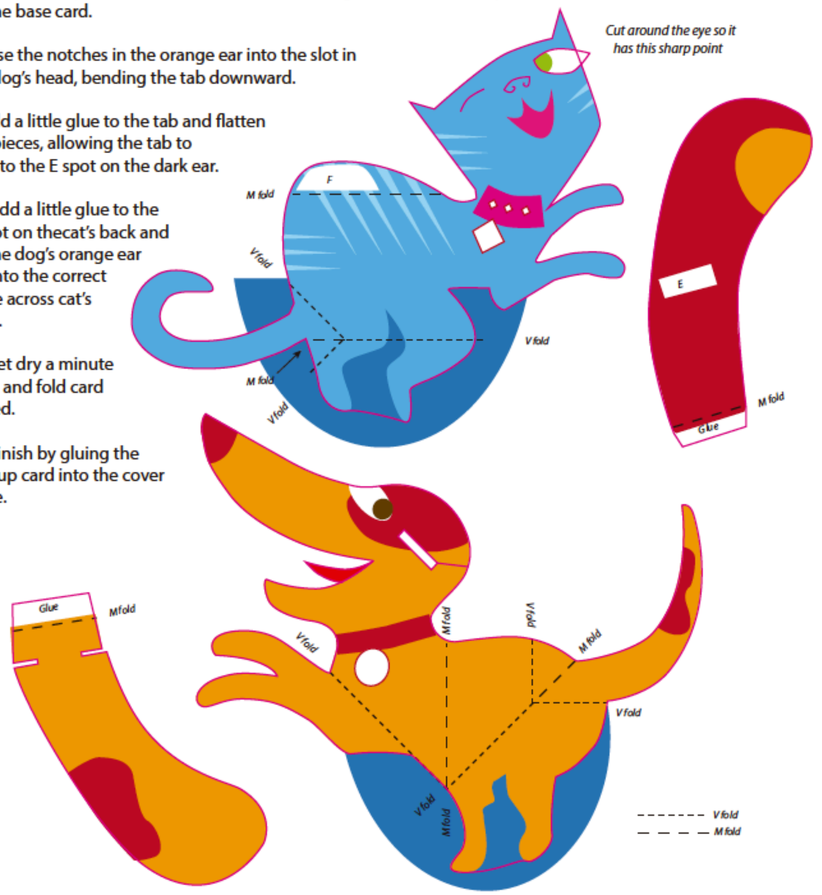
8. Ease the notches in the orange ear into the slot in the dog's head, bending the tab downward.

9. Add a little glue to the tab and flatten the pieces, allowing the tab to glue to the E spot on the dark ear.

10. Add a little glue to the F spot on thecat's back and let the dog's orange ear fall into the correct place across cat's back.

11. Let dry a minute or so and fold card closed.

12. Finish by gluing the pop up card into the cover piece.



Bruce Foster

Estudos do Papel | Paper Studies

Mestrado em Design Gráfico - Apresentação 04 | Presentation 04

Cutout illustration

Nuno Fragata Marques | S2 | 2023/2024

Exercise I: Leporello + **Cutout illustration** + Pop-up



Papel Paper

CARACTERÍSTICAS DO PAPEL	**PAPER CHARACTERISTICS**
ÓPTICAS	OPTICAL
BRILHO DO PAPEL	**SHINE OF PAPER**
LUMINOSIDADE DO PAPEL	**PAPER BRIGHTNESS**
OPACIDADE DO PAPEL	**PAPER OPACITY**
COR DO PAPEL	**PAPER COLOR**
FÍSICAS	PHYSICAL
RASGO / RESISTÊNCIA À TRAÇÃO	**TEAR / TENSILE STRENGTH**
RESISTÊNCIA HÚMIDA	**WET STRENGTH**
RESISTÊNCIA À DOBRA	**FOLDING RESISTANCE**
FORÇA DE EXPLOSÃO	**EXPLOSION FORCE**

Cutout with a cutter

vs

Cutout with a plotter

A explorar | To explore

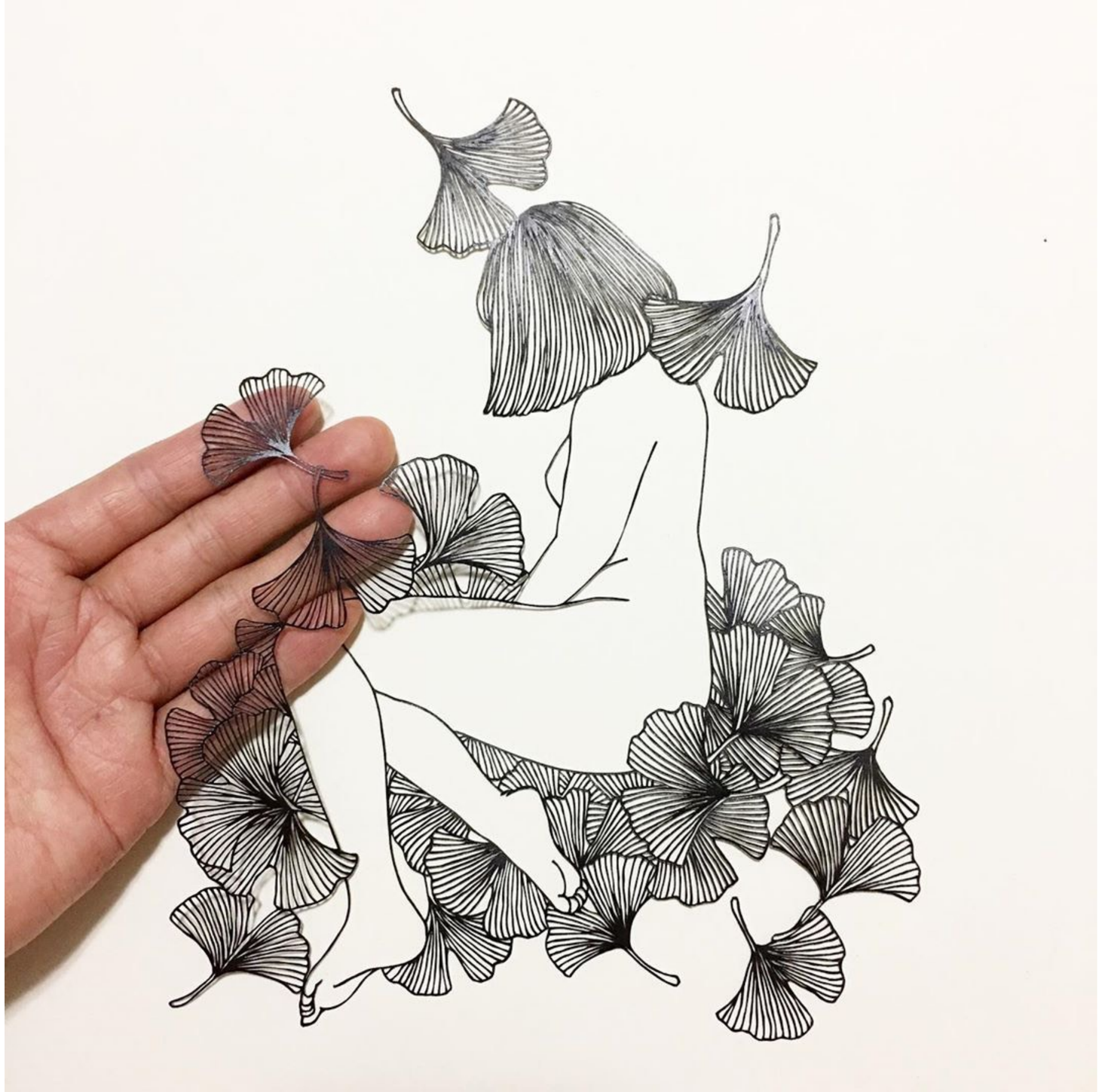
Narrative in the visuals of the graphic object

Narrativa no grafismo do objeto gráfico

Recortes
Bidimensionalidade e leitura
Composição e leitura
Planificação e recorte

Cutouts
Two-dimensionality and reading
Composition and reading
Planning and clipping

Book / Cutout illustration



Kanako Abe
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Eugenia Zoloto
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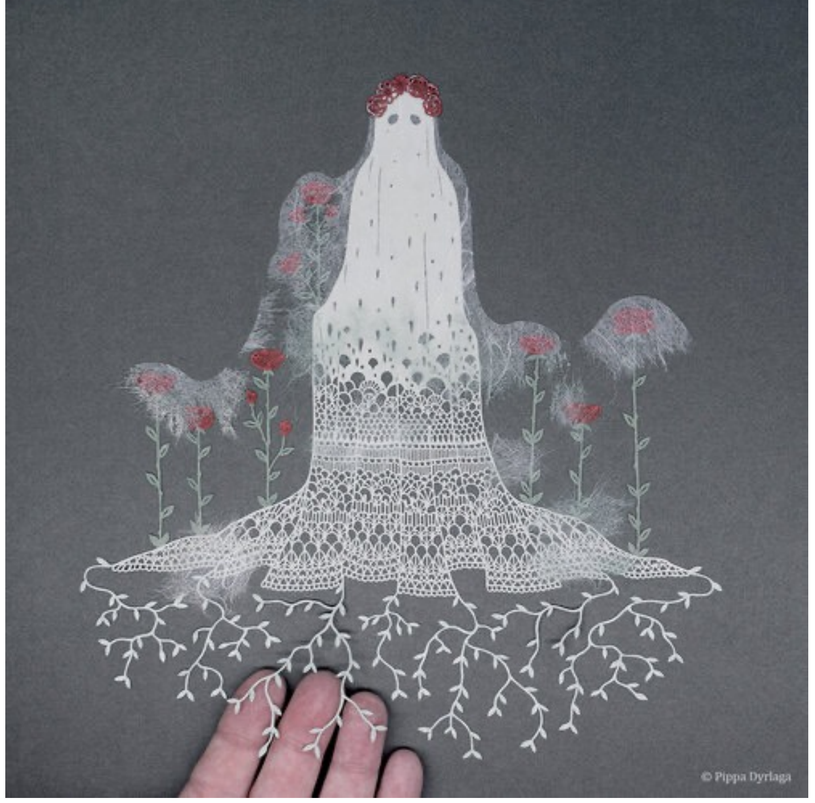


The Bride, Hand cut washi paper, painted with acrylic.
2020



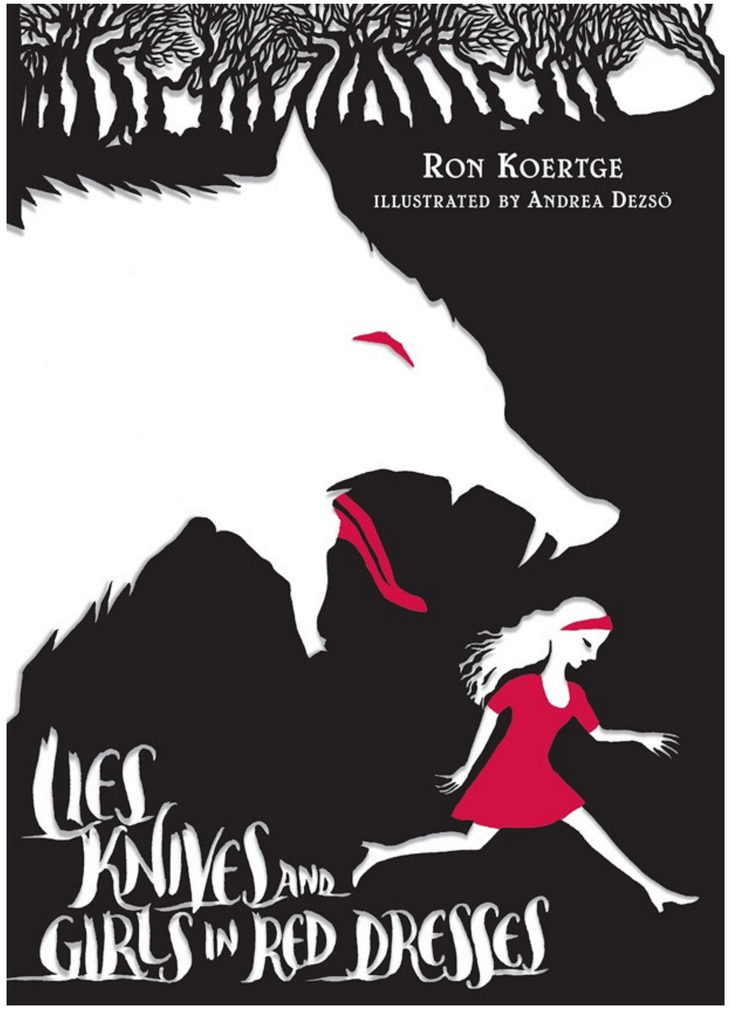
A place both Wonderfull and strange,
Piece inspired by Twin Peaks and including a Dale Cooper Quote



I'm Lonely, Hand cut and hand painted paper,
Cut from 36 gsm Awagami Factory Kitakata paper.
2020

Pippa Dyrlaga
https://www.pippadyrlaga.com







Illustrations for Editorial.

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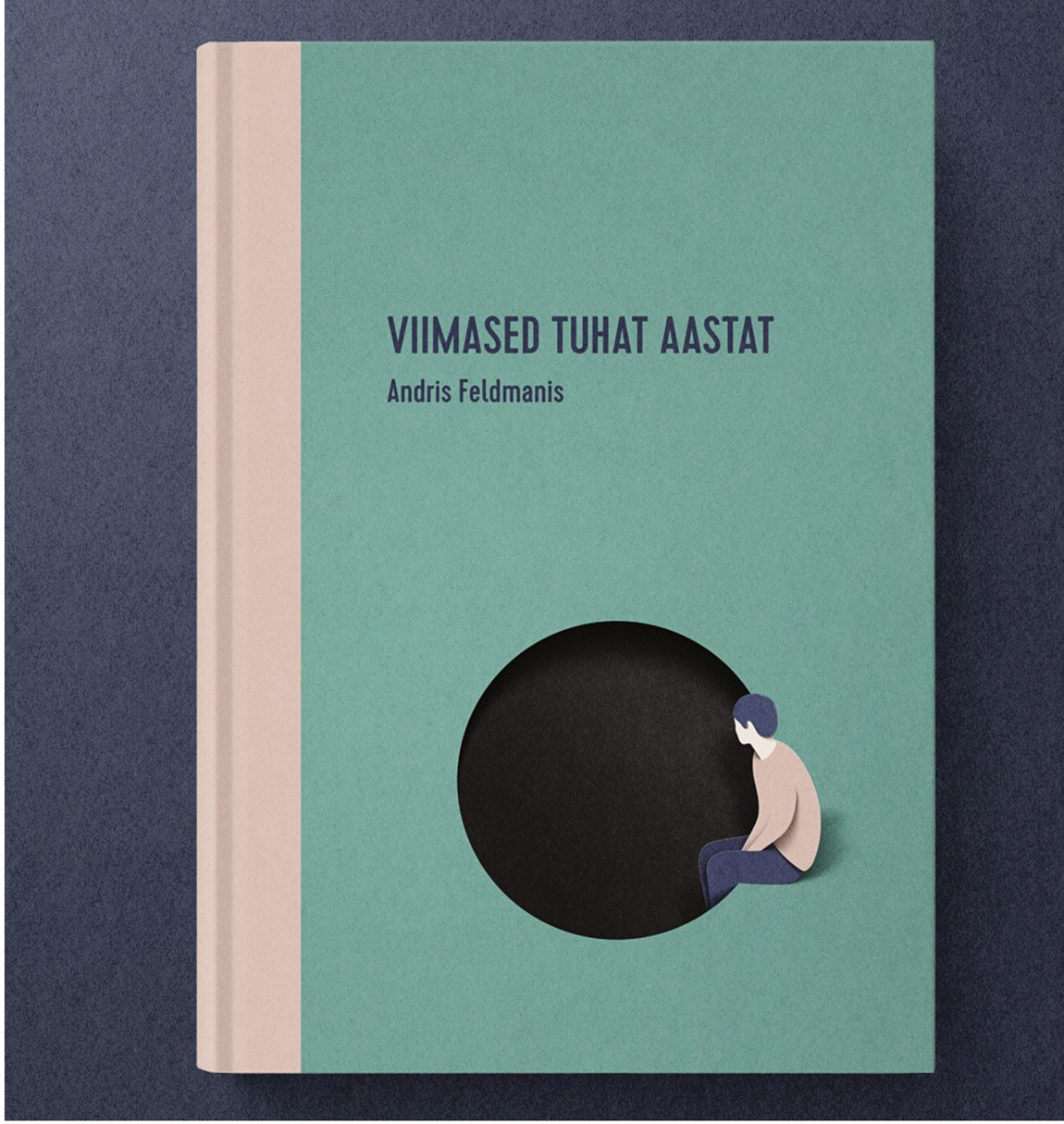
Elsa Mora
https://www.elsamora.net





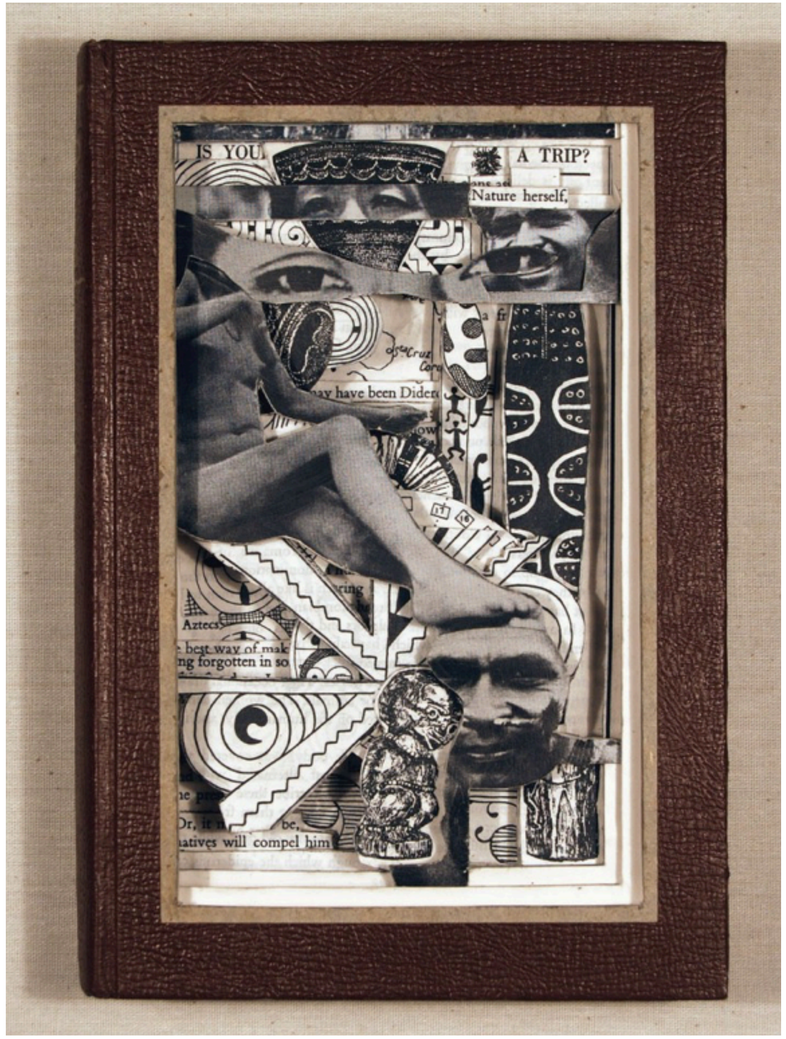
Illustrations for book covers.

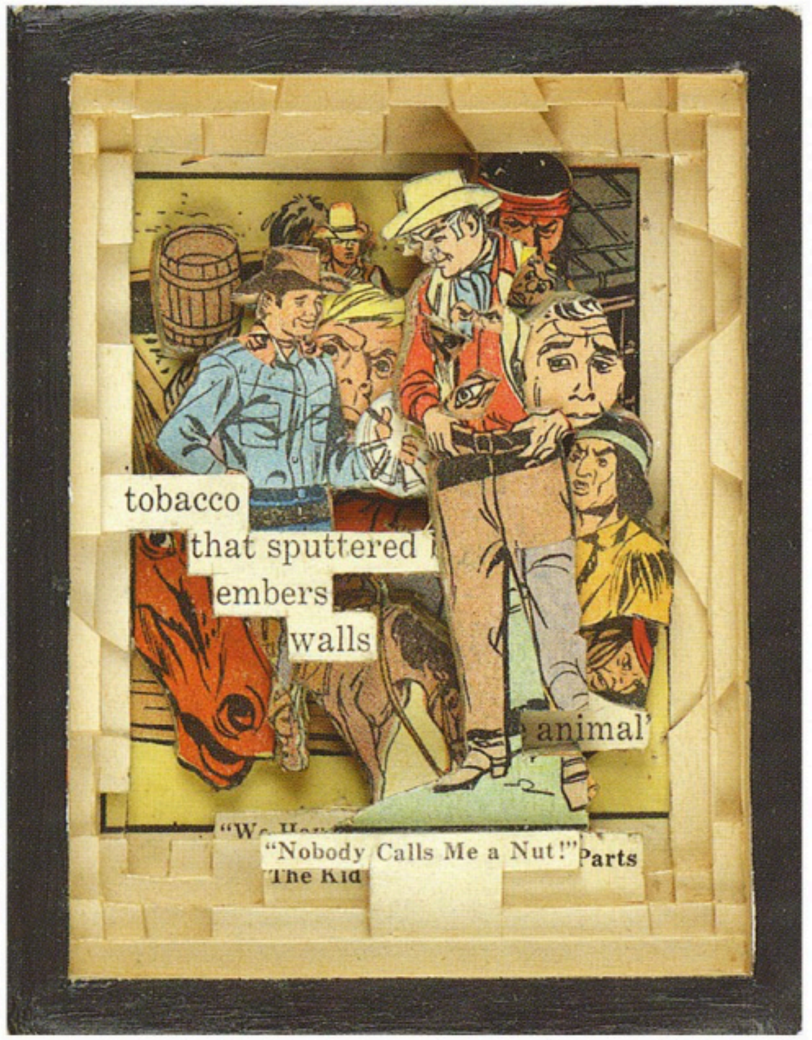
Eiko Ojala
https://ploom.tv





Owen Gildersleeve
https://owengildersleeve.com





Brian Dettmer
https://briandettmer.com

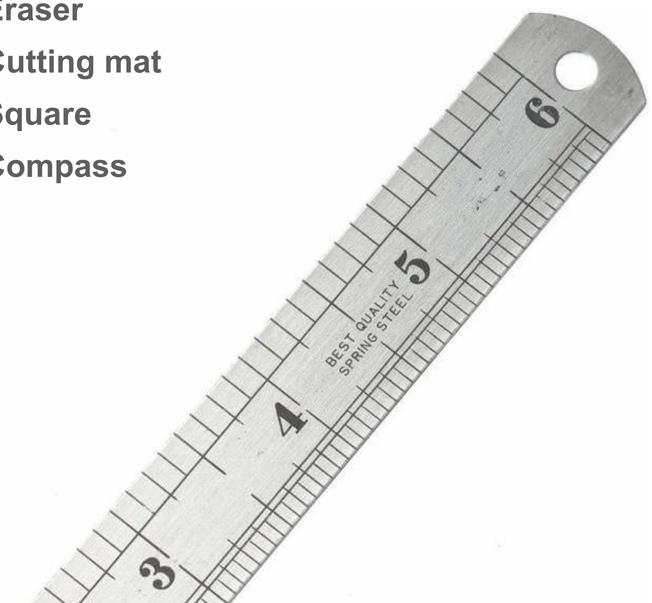




Materiais | Materials

Papel/ Cartolina
Papel vegetal
Tesoura
Cola/ Cola em baton
Fita-cola
X-ato/ Bisturi
Lápis/ Lapiseira
Régua de metal
Borracha
Tapete para corte
Esquadro
Compasso

Paper / Cardboard
Vegetal paper
Scissors
Glue/ Glue Stick
Adhesive tape
X-ato/ Scalpel
Pencil / Pencil
Metal ruler
Eraser
Cutting mat
Square
Compass



Pensando a imagem | Thinking the image

A MENSAGEM / THE MESSAGE

O que vou comunicar e como vou comunicar
What will I communicate and how will I communicate it

Camadas / Foco / Encenação
Layers / Focus / Staging

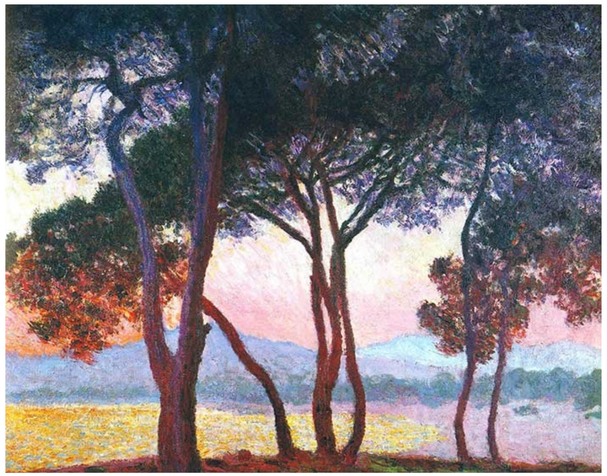
Composição / Ritmo / Cor / Textura
Composition / Rithm / Color / Texture

O que há para ler / Como deve ser lido
What's there to read / How it should be read

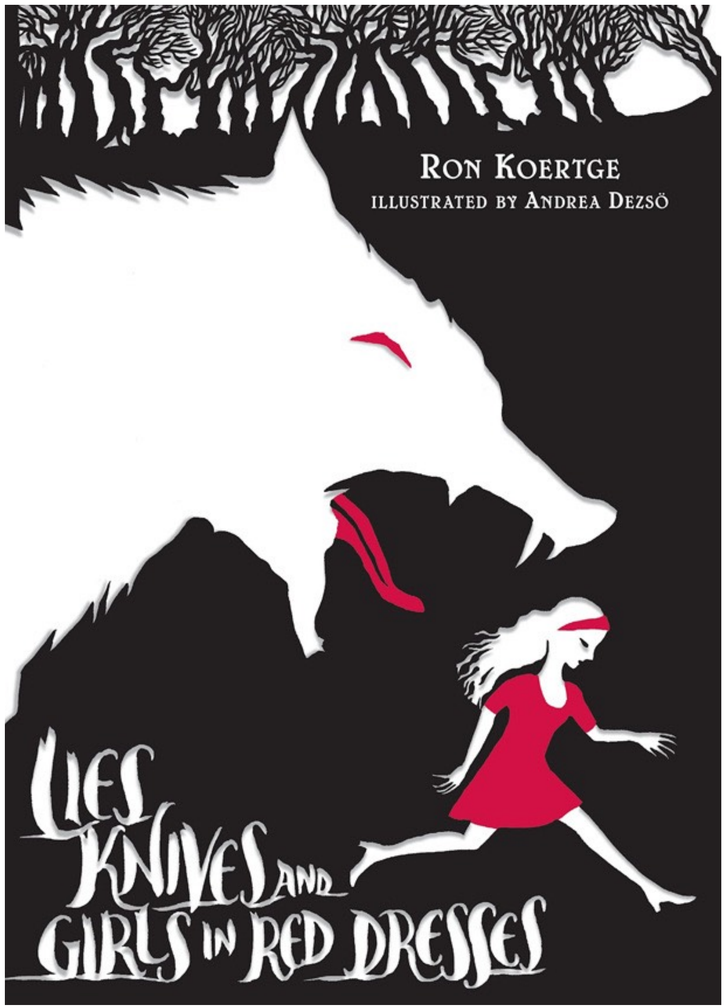
A NARRATIVA / THE NARRATIVE

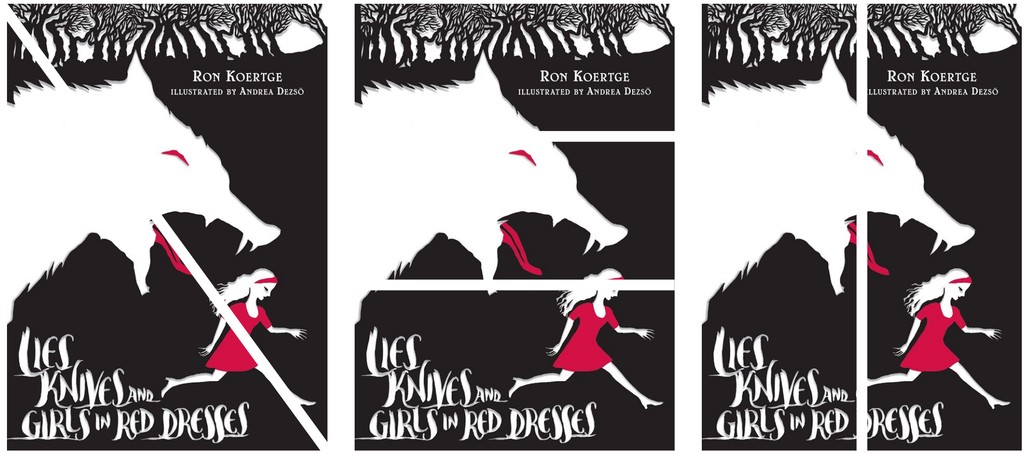


Eiko Ojala



Claude Monet, Juan-Les-Pins, 1888





Pistas e direções para o olhar
Clues and directions for the eye

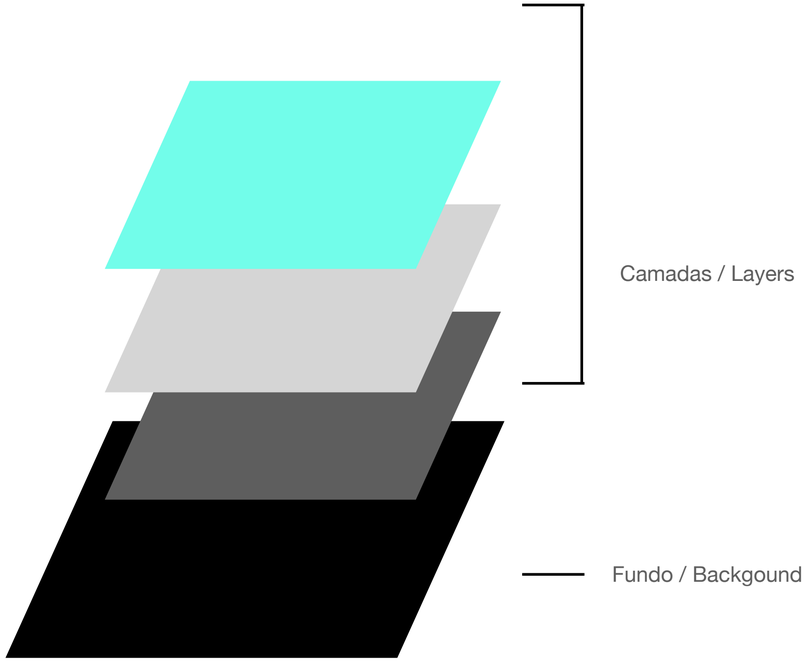
…

COMPOSIÇÃO
COMPOSITION

Diagonais, Terços, Medianas,…
Diagonals, Thirds, Medians,…

Espaço positivo/ Espaço negativo.
Positive space/ Negative space.

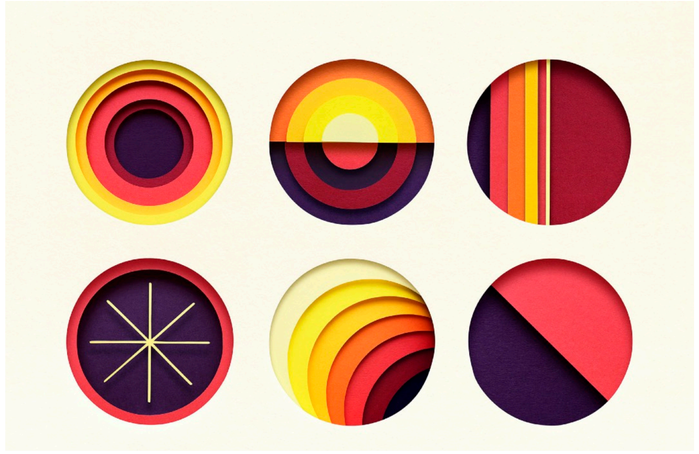
O foco da imagem/ O envolvente da imagem.
The focus of the image/ The surrounding area.

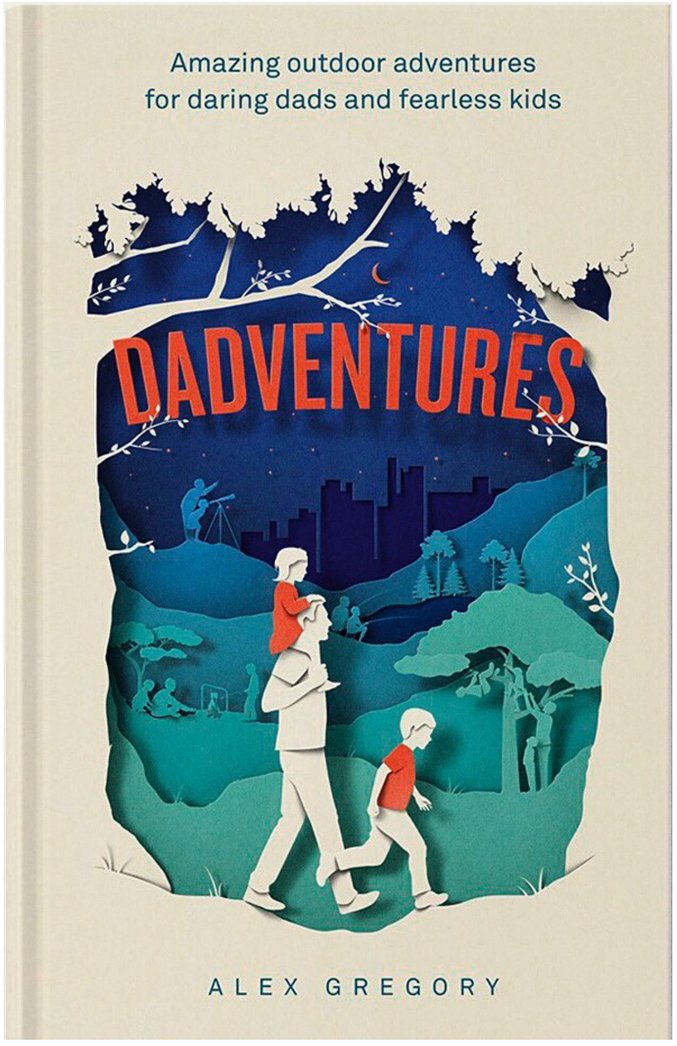




https://designbundles.net/plusstore/953602-layered-papercut-paper-cut-forest-papercut

As camadas e a mensagem / Clareza / Dispersão e concentração de elementos.
The layers and the message / Clarity / Dispersion and concentration of elements.





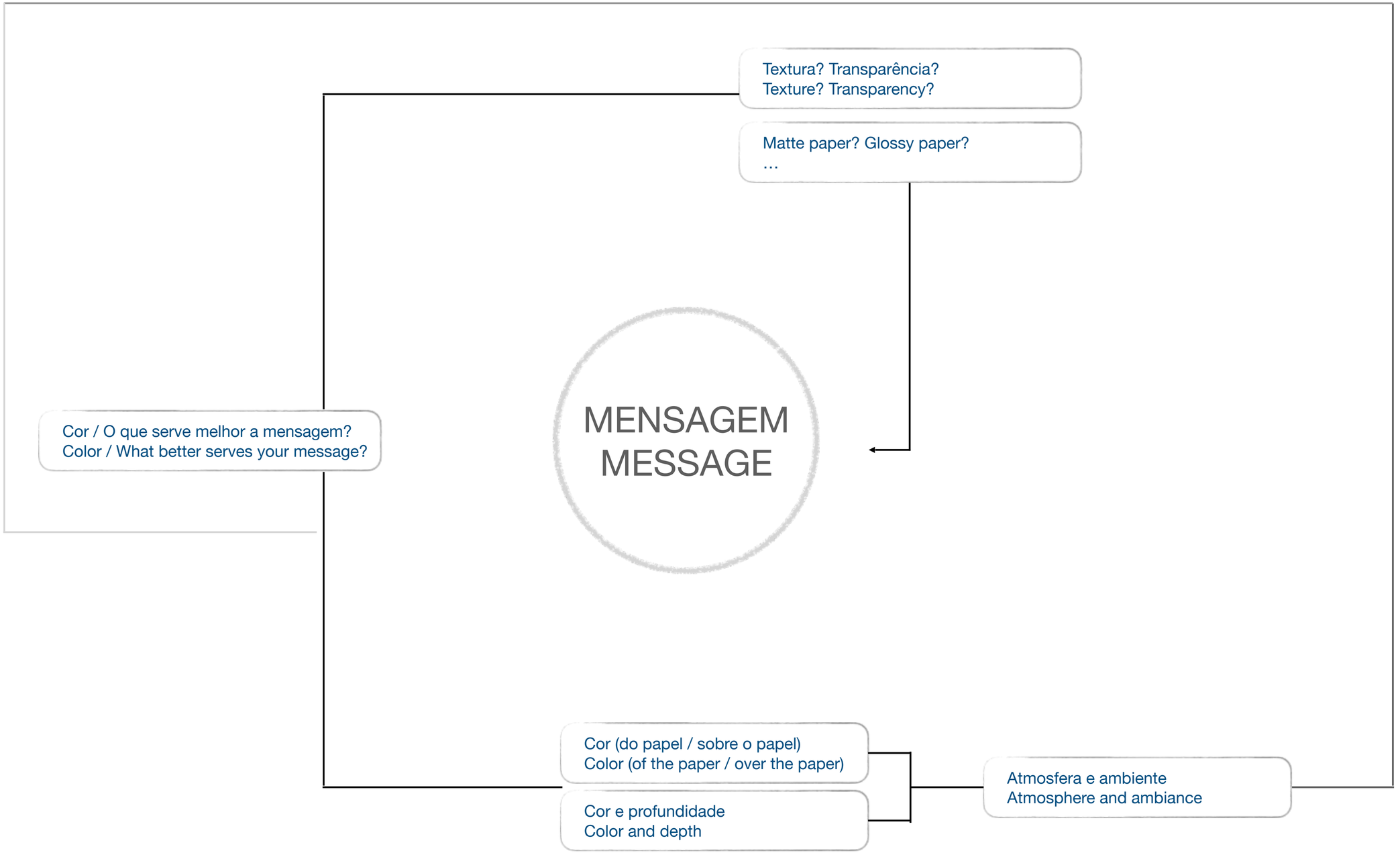


Cor / O que serve melhor a mensagem?
Color / What better serves your message?

Cor (do papel / sobre o papel)
Color (of the paper / over the paper)

Cor e profundidade
Color and depth

Atmosfera e ambiente
Atmosphere and ambiance


Textura? Transparência?
Texture? Transparency?
Matte paper? Glossy paper?
…
MENSAGEM
MESSAGE
Cor / O que serve melhor a mensagem?
Color / What better serves your message?
Cor (do papel / sobre o papel)
Color (of the paper / over the paper)
Cor e profundidade
Color and depth
Atmosfera e ambiente
Atmosphere and ambiance

Criando a imagem | Creating the image

A ter em conta | To have in count

- Será natural ler a profundidade na imagem se a cor mais clara estiver no layer mais acima e a mais escura estivar no layer mais abaixo. Mas pode-se fazer o inverso para efeitos dramáticos. It will be natural to read the depth in the image if the lightest color is in the topmost layer and the darkest color is in the lowest layer. But the reverse can be done for dramatic effects.

- Os cortes são sempre mais bonitos do lado oposto ao que foi cortado. The cuts are always more beautiful on the opposite side to the one that was cut.

- Observem as linhas da imagem ao preparar cada layer. As linhas não podem ser excessivamente finas pois irão rasgar. Observe the lines of the image when preparing each layer. The lines cannot be excessively thin as they will tear.

- Observem as linhas da imagem ao preparar cada layer. Encontrem formas de criar intersecções ou suportes para as linhas. Em linhas longas, procurem que existam pelo menos 3 pontos de ligação/apoio. Observe the lines of the image when preparing each layer. Find ways to create intersections or supports for the lines. In long lines, make sure that there are at least 3 connection / support points.

- Comecem por cortar as partes/linhas que identifiquem como sendo as mais frágeis. Depois avancem para a imagem geral. Start by cutting the parts / lines that you identify as being the most fragile. Then move on to the big picture.

- Retirem as partes à medida que as cortam. Verifiquem que os cortes estejam bem terminados. Usem o bisturi para tirar a parte de papel e puxem com os dedos. Se não sair à primeira, apliquem um pouco de pressão. Remove the parts as you cut them. Check that the cuts are well finished. Use the scalpel to remove the paper and pull with your fingers. If it doesn't come out the first time, apply a little pressure.

- A lâmina do x-ato ou do bisturi deve ser nova e estar bem afiada. Ao mudar a lâmina, envolvam-na com fita-cola antes de a partir ou retirar. The blade of the x-ato or the scalpel must be new and very sharp. When changing the blade, wrap it with tape before breaking or removing it.

- Tenham em atenção que quanto mais grosso for o cartão que sirva como base de corte, mais rápido a lâmina ficará cega. Keep in mind that the thicker the card that serves as the cutting base, the faster the blade will be blind.

A ter em conta | To have in count

- Em caso de necessidade, uma linha rasgada pode ser arranjada ou reforçada com fita-cola transparente aplicada na parte não visível do papel, cortando de seguida o excesso da fita-cola. Também se pode usar um pedaço de papel para o mesmo. If necessary, a torn line can be arranged or reinforced with transparent tape applied to the non-visible part of the paper, then cutting off the excess tape. You can also use a piece of paper for it.

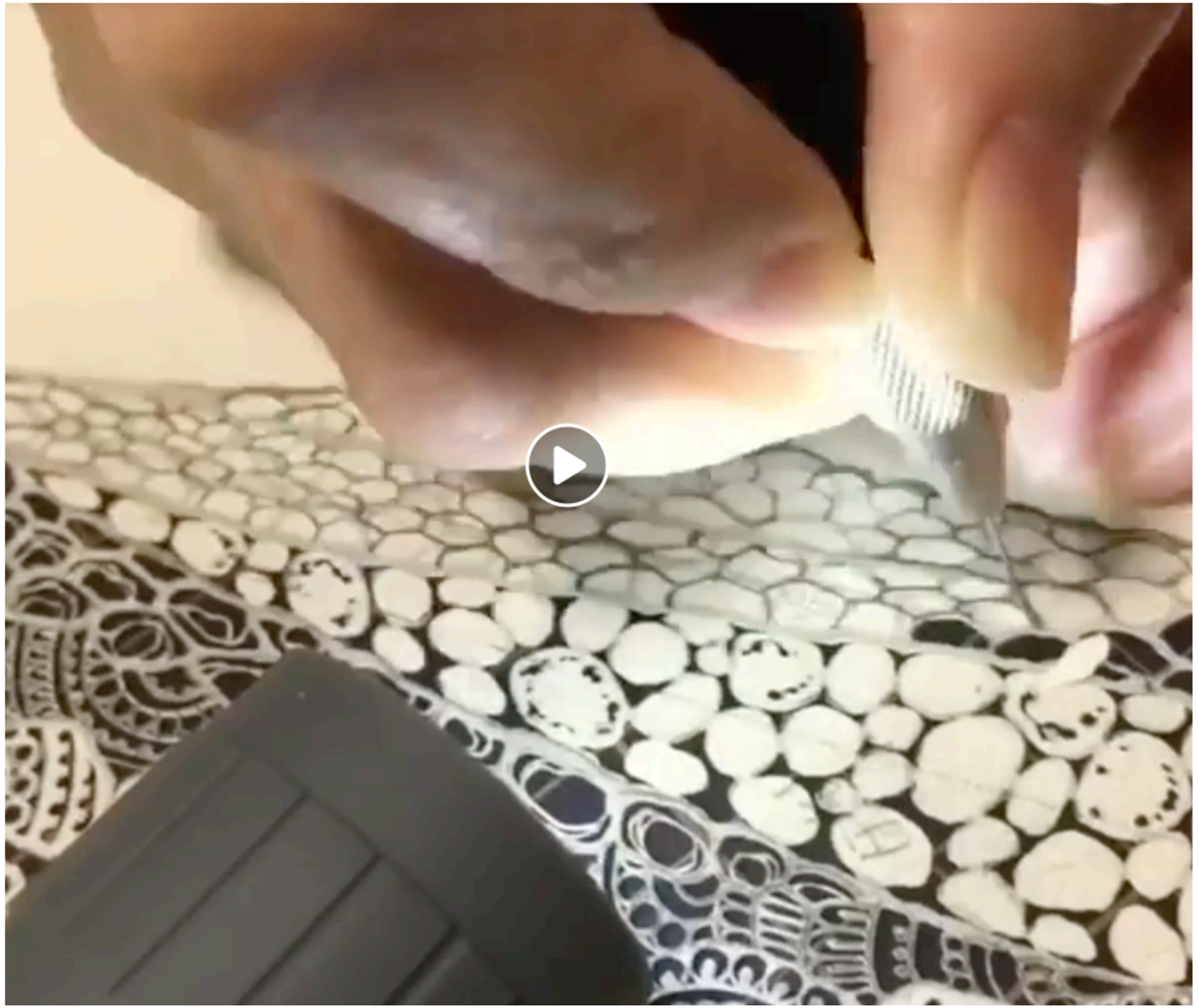
- Depois de colarem cuidadosamente os vários layers, deixem a composição debaixo de uma superfície plana e pesada enquanto seca. After carefully gluing the various layers, leave the composition under a flat and heavy surface while it dries.

- Enquanto trabalham, façam pausas regularmente e estiquem as mãos. While working, take regular breaks and stretch your hands.

- Parem regularmente, por exemplo a cada 15 minutos para olhar seu trabalho e para verificar a composição. Essa observação vai ajudar a tomarem decisões acerca da imagem, coisas de que não se aperceberam aquando da planificação, adaptações que precisem de ser feitas. Stop regularly, for example, every 15 minutes to look at your work and check the composition. That observation will help you to make decisions about the image, things that you did not realize when planning, adaptations that need to be made.

- Se fizerem um erro, não tentem consertar imediatamente. Trabalhem numa outra parte da imagem, voltem mais adiante e depois decidam o que mudar. Sejam ponderados. If you make a mistake, don't try to fix it right away. Work on another part of the image, go back further and then decide what to change. Be thoughtful.

- Papel: 120 gr +, de preferência. Paper: 120 gr +, preferably.



Masayo Fukuda
https://www.facebook.com/topartistshow/videos/japanese-art-of-paper-cutting-aka-kirie-by-masayo-fukuda/2184105395242353/



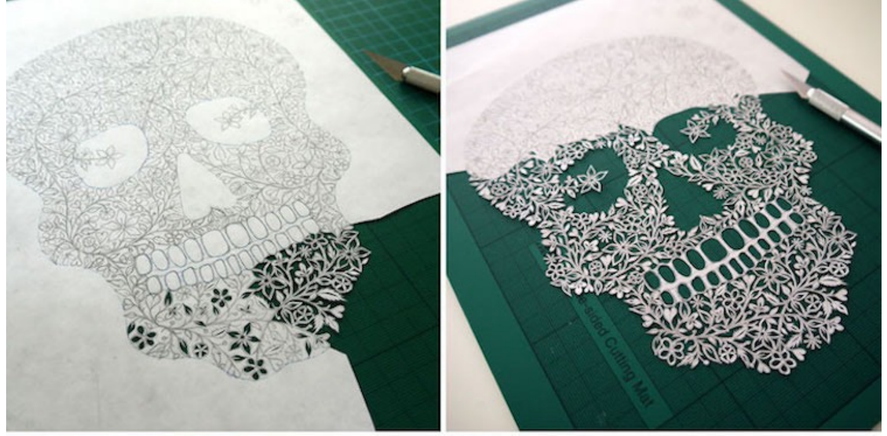
Linhas, para criar suporte e evitar fragilidades.

Lines, to create support and avoid weaknesses.

Parth Kothekar
https://www.youtube.com/channel/UCe6bYAHN9o88UkKtTiQ26Lw

Planificar o desenho e cortar pelo verso. A frente será o recorte finalizado.

Flatten the design and cut from the back. The front will be the finished cutout.

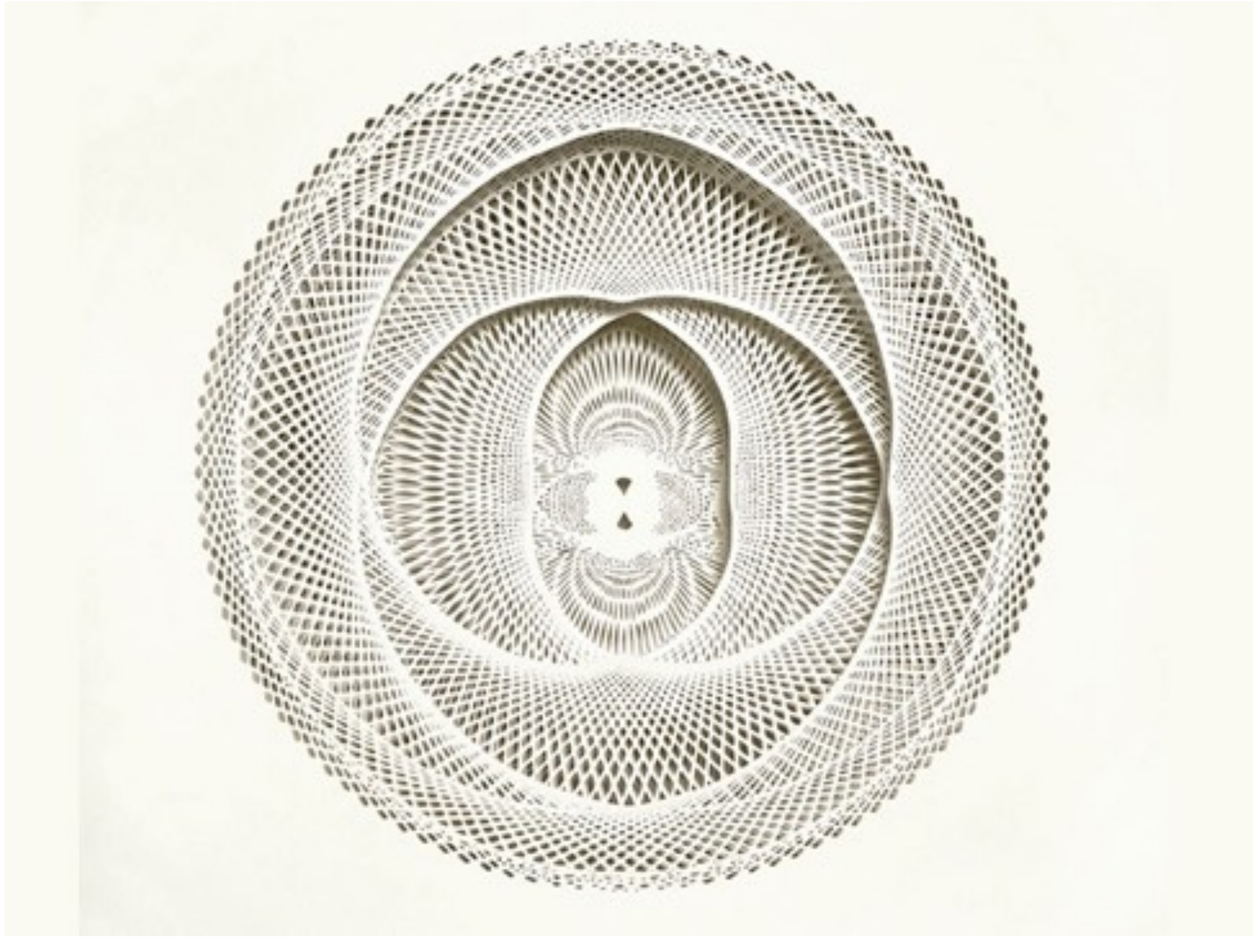




Susy Taylor
https://metro.co.uk/2015/05/27/artist-creates-beautiful-paper-cut-art-out-of-single-sheets-of-paper-5216445/

Planificar a margem e os níveis do trabalho.

Plan the margin and levels of the work.



Tahiti Pehrson
https://inhabitat.com/tahiti-pehrsons-heavenly-paper-cut-sculptures-will-play-tricks-on-your-brain/tahiti-pehrson2/

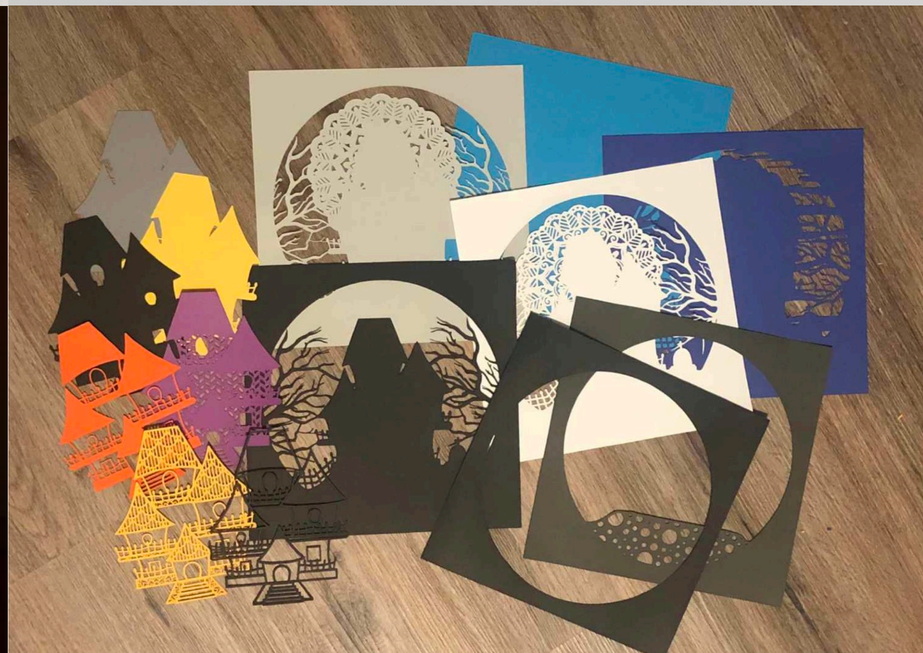




Planificar a profundidade e o foco.

Plan the depth and the focus.







Advanced Dragon Puppet

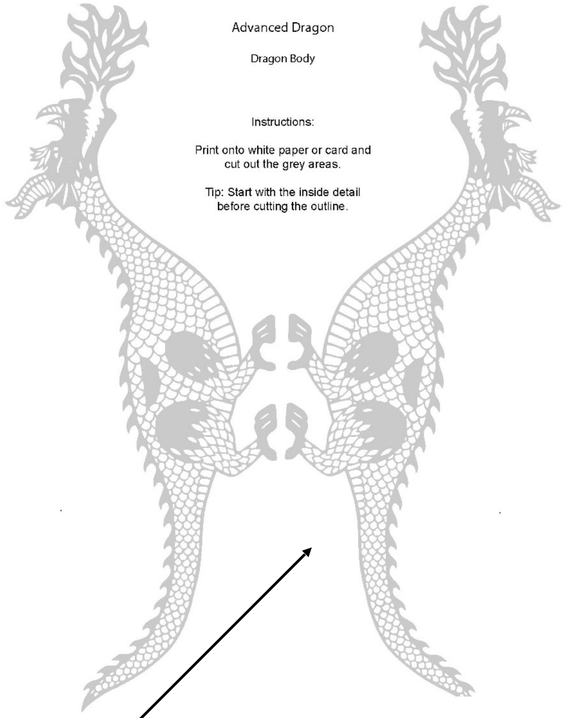
by Pippa Dyrlaga

A finger controlled dragon puppet.

You will need:
- Printer
- 2 x sheet of white card or paper (around 120 gsm is best)
- 1 x sheet of coloured paper (120 - 200gsm is best)
- Craft knife
- liquid glue or paste (starch/rice or slow drying glue is great)
- Approximately 1m of embroidery or thick thread

Instructions:

1. Print out the templates on the paper. Use the white card/paper for the detailed sections, and the coloured paper for the outlines.
2. Cut out the grey areas of the white dragon bodies, cutting the detail inside first, then the outlines.
3. Repeat step 2 with wings.
4. Cut out the coloured paper outlines.
5. On the coloured wing section, score lightly on the dashed line. This will be the bend of the wing.
6. Using a liquid glue, carefully spread on enough parts of the back (printed) side of the white card to attach it to the coloured card piece. Let each piece dry before attaching the second on the other side. A slow drying glue helps to position correctly.
7. Repeat with the wings, and attach to the top of the wing up to the dashed line.
8. Pierce holes through the dot on the wing, and through the coloured card at two points at the nape of the dragons neck, and the base of the tail, just under the back scales.
9. Take a 50cm length of thread, fold in half and create a loop at the end that will fit your fingers, try and make these as even as you can. This will leave two threads coming from it, even in length.
10. Using the ends, guide the thread through the holes in the wings (a needle may help if you struggle). Repeat on both wing. Tie a knot big enough to keep the thread from slipping through the hole.
11. Repeat step 11 with the body of the dragon.
12. Place one loop around your index finger, and one around your middle finger. Alternating your fingers up and down will make the dragon fly.



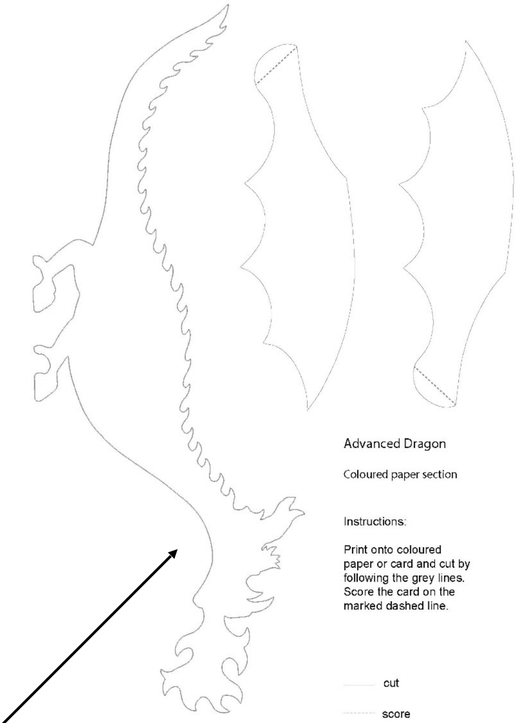
Advanced Dragon

Dragon Body

Instructions:

Print onto white paper or card and cut out the grey areas.

Tip: Start with the inside detail before cutting the outline.



Advanced Dragon

Coloured paper section

Instructions:

Print onto coloured paper or card and cut by following the grey lines. Score the card on the marked dashed line.

cut

score

Forma a recortar na folha branca.
Shape to cut in the white sheet.

Forma a recortar na folha colorida.
Shape to cut in the colored sheet.



Advanced Dragon

Wing detail section

Instructions:

Print onto white paper or card and cut out the grey areas.

Tip: Start with the inside detail before cutting the outline.

Pippa Dyrlaga
https://static1.squarespace.com/static/56d4618e356fb009214504fe/t/602502127ab38c7f281b0d66/1613038104163/Advanced+Dragon.pdf

Curiosidades | Curiosities

Kiri-e, Arte Japonesa de cortar papel.
Japanese Art of paper cutting.

Origami, Arte Japonesa de dobrar papel.
Japanese Art of folding paper.

Kirigami, uma variação do Origami, oferece maior liberdade criativa ao permitir que os artistas recortem, prendam e tesourem o papel possibilitando a tridimensionalidade.
A variation of Origami, offers more creative freedom by allowing artists to cut, clip, and snip the pape allowing tridimensionality.

Washi, Papel artesanal de grande resistência (força e durabilidade), produzido a partir de fibras das plantas Kozo, Mitsumata e Gampi, plantas de fibras longas (em vez da matéria vegetal derivada da madeira, utilizada nos papéis convencionais).

nuno.marques@ipleiria.pt

Estudos do Papel | Paper Studies

Mestrado em Design Gráfico - Apresentação 05 | Presentation 05

Nuno Fragata Marques | S2 | 2023/2024



Ale Rambar

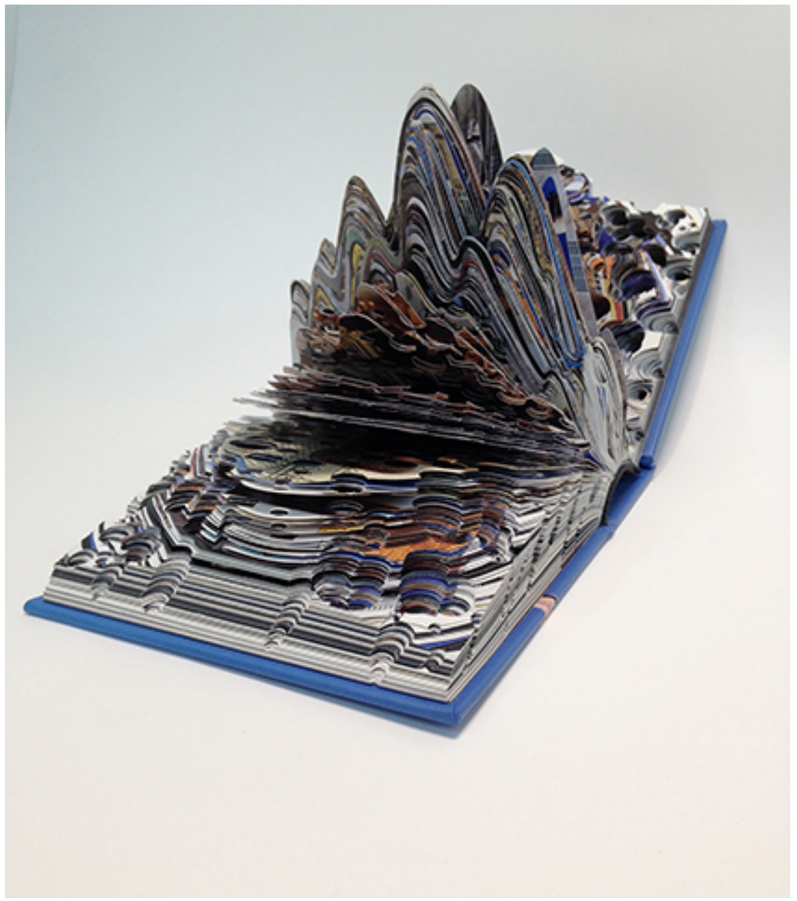
2D/ 3D/ paper illustration/ Expression



Curiosidades e autores





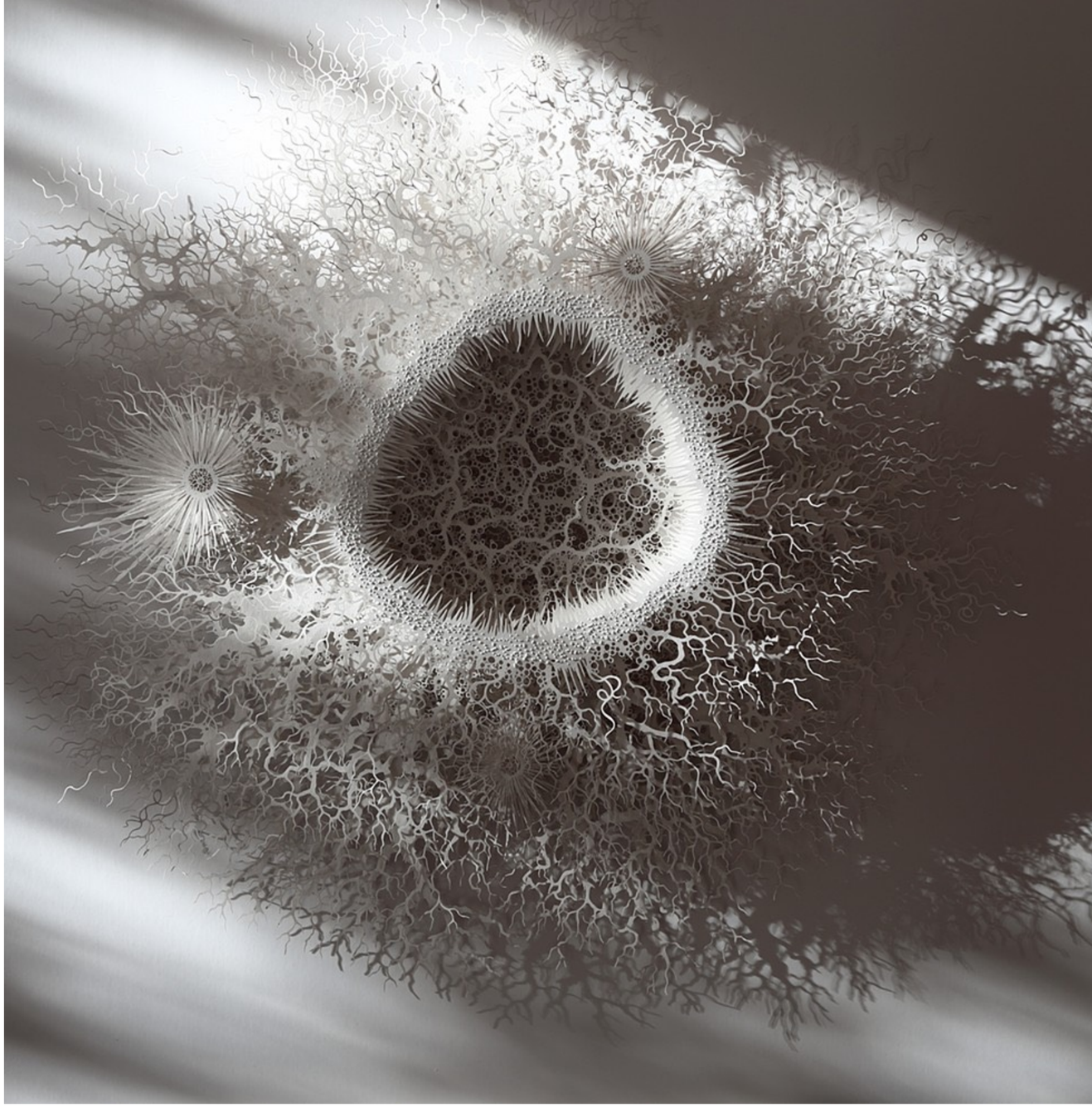


Ambe Noriko
https://www.norikoambe.com

Curiosidades e autores







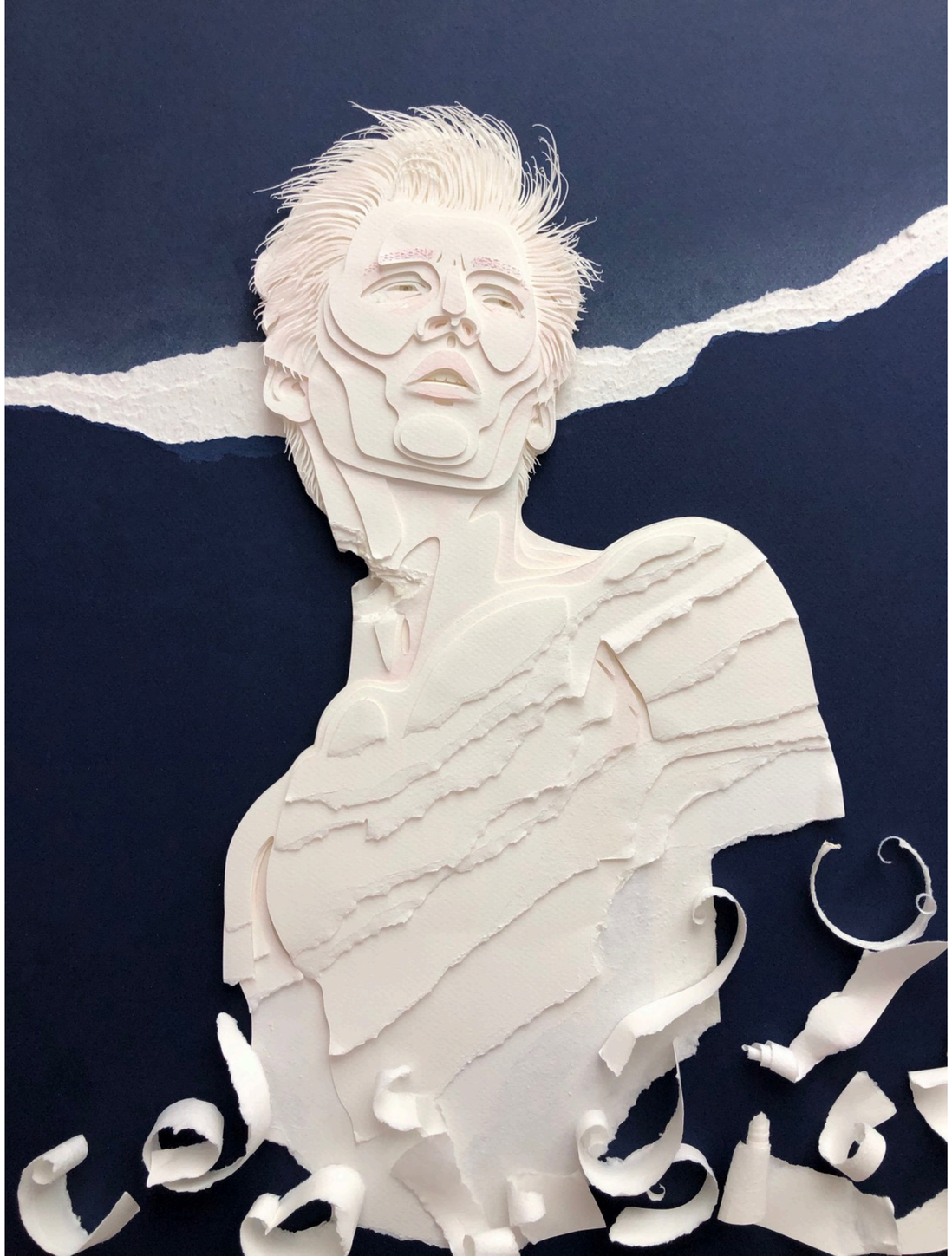
Rogan Brown
https://roganbrown.com/home.html







Calvin Nicholls
https://calvinnicholls.com/portfolio/

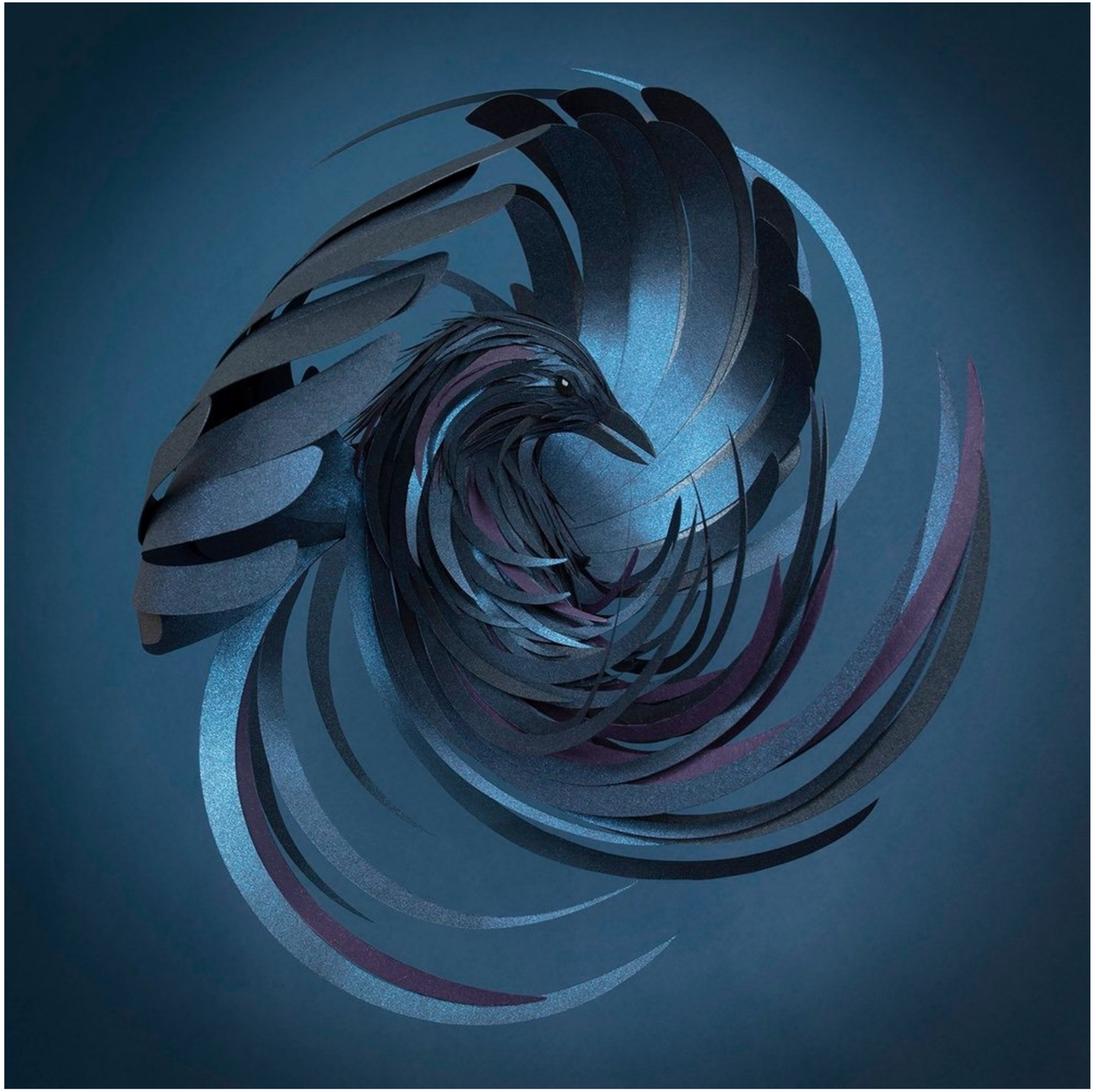






Ale Rambar
https://www.alerambar.com

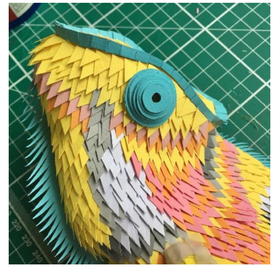
Curiosidades e autores





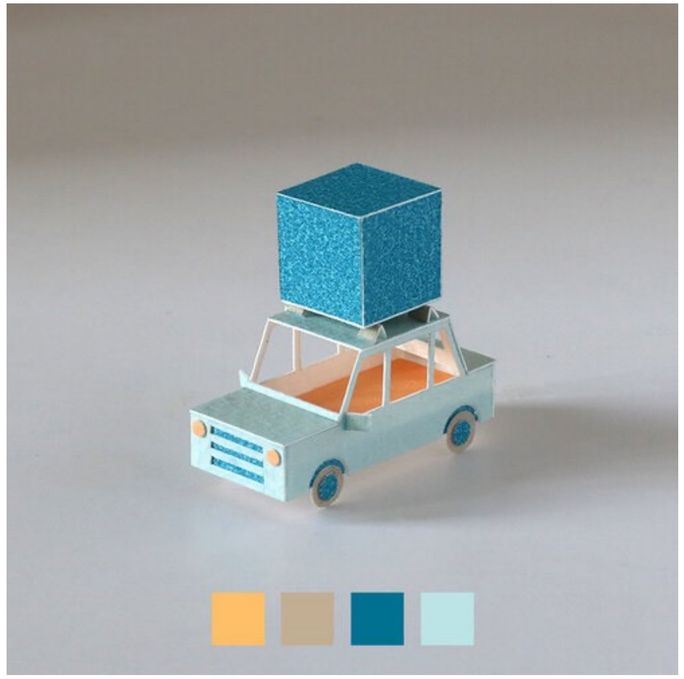






Lisa Lloyd
https://www.lisalloyd.net











Charles Young
https://www.paperholm.com

Estudos do Papel | Paper Studies

Mestrado em Design Gráfico - Apresentação 06 | Presentation 06

Nuno Fragata Marques | S2 | 2023/2024

Exercise: Object / Poliedric illustration



Exercício | Exercise

I- ONE4ALL & ALL4ONE

- What do you want to explore? What narrative? What single image that becomes 4 images? Where will you add pop-ups? Why? How?

II- Poster/ Motion poster (A3)

Poster com movimento, criado como fotografia, com uso de recortes e objeto de papel tridimensional

II- MINI ME/I AM A GIANT

- O que querem explorar? Qual o objeto físico que será recriado como papel em 3D? Como serão adicionados recortes de papel à imagem/personagem? Que movimento existirá? Porquê?

QUE METÁFORA ESTÃO A EXPLORAR AO JUNTAR A TUDO ISTO?

(OBJETO DE PAPEL 3D, RECORTES, MOVIMENTO/ANIMAÇÃO)

1. Uma metáfora/ Uma mensagem
2. Que objeto serve a metáfora
3. Identificar a geometria do objeto
. Transportar a geometria para o papel
. Criar o objeto
4. Caraterizar algo (personagem?)
. Como fazer o melhor uso de recortes?
5. Fotografar para animar

1. A metaphor/ A message
2. 2. What is the best object for the metaphor?
3. Identify the object's geometry
. Transport geometry to paper
. Create the object
4. Characterize (a character?)
. How to make the best use of cut-outs?
5. Photograph to animate

Narrative in the graphic object and in the character/movement
Narrativa no objeto gráfico e na personagem/ movimento

Objeto/ Metáfora/ Movimento
Object/ Metaphor/ Movement

Metáfora
Tridimensionalidade
Composição

Metaphor
Three-dimensionality
Composition

Movimento

3D paper object + Character

Movement



Materiais | Materials

Papel/ Cartolina
Tesoura
Cola/ Cola em baton
Fita-cola
X-ato/ Bisturi
Lápis/ Lapiseira
Régua de metal
Borracha
Tapete para corte
Compasso





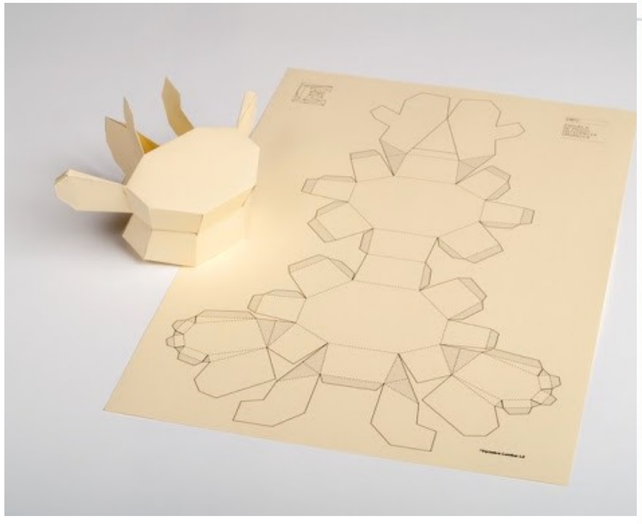


Paper / Cardboard
Scissors
Glue/ Glue Stick
Adhesive tape
X-ato/ Scalpel
Pencil / Pencil
Metal ruler
Eraser
Cutting mat
Compass



Metáfora | Planificação | Objeto | Cenário
Papel como suporte para o objeto + Papel como suporte para a personagem

Metaphor | Planning | Object | Scenario
Paper as support for the object + Paper as support for the character





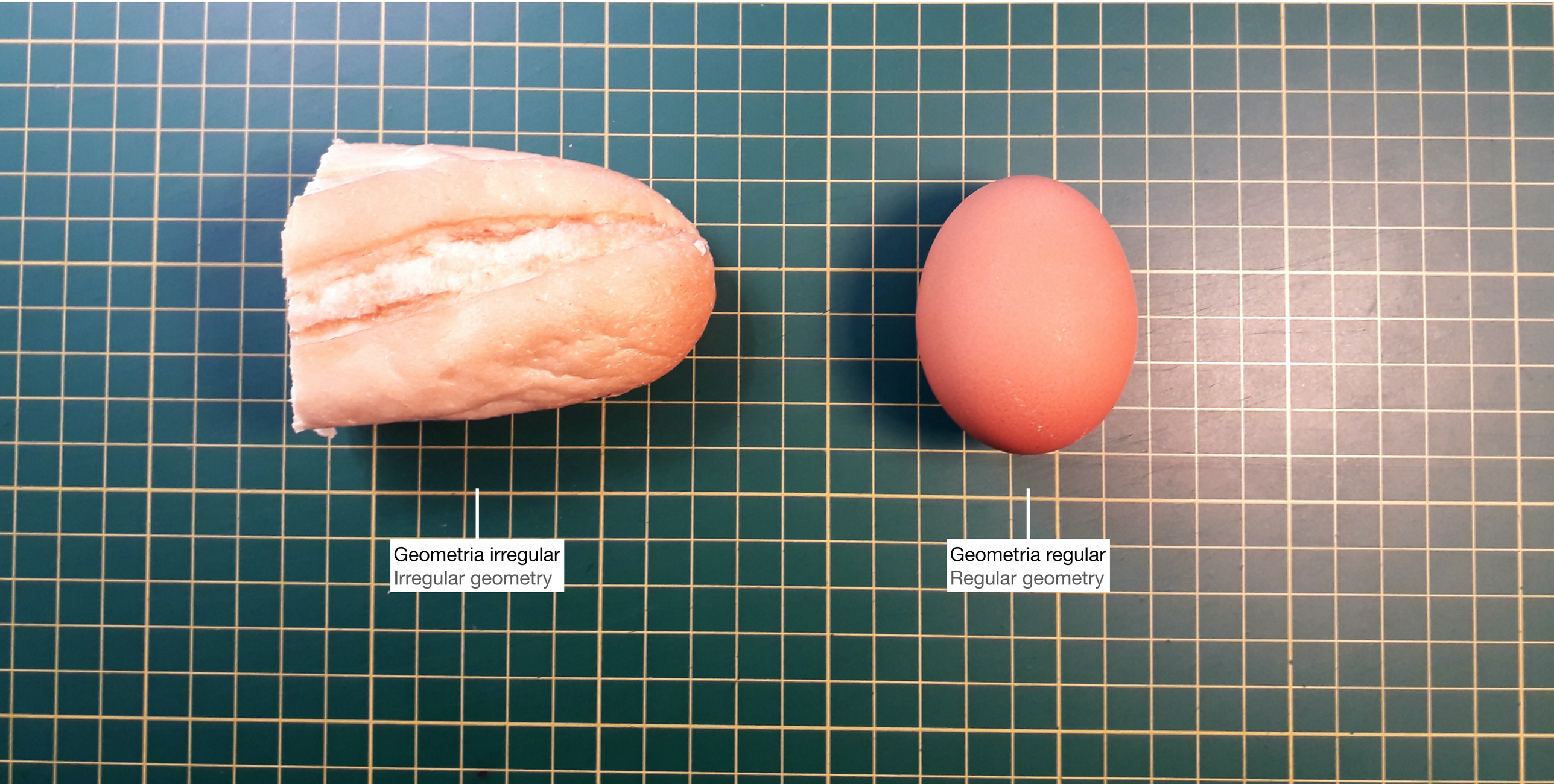


Lo Siento Studio

Escolha do objeto | Chosing the object



Objetos regulares e Objetos irregulares | Regular objects and Irregular objects



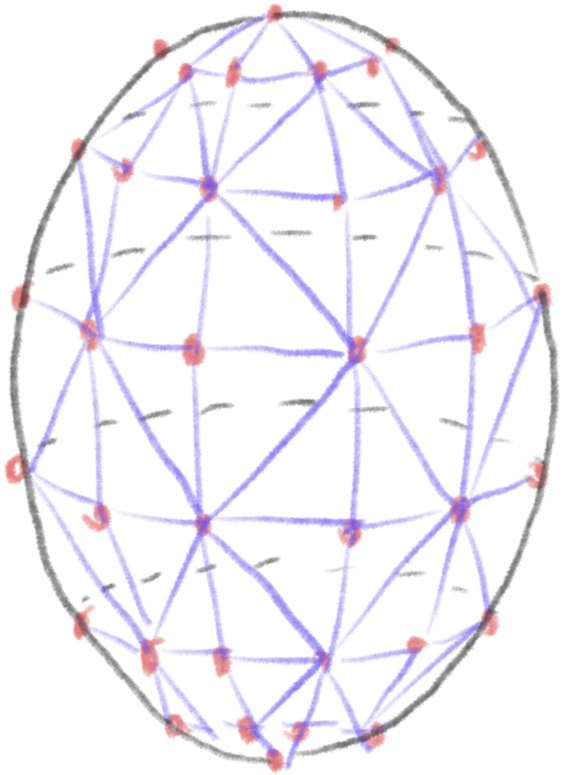
Identificar pontos | Identify points

Distribuição e densidade | Distribution and Density

O que vamos fazer é identificar e unir pontos, criando raciocínios a partir dos objetos e levando-os para a folha de papel.
What we are going to do is identify and join points, creating reasoning from the objects and taking them to the sheet of paper.

Em objetos de geometria regular distribuímos pontos de forma regular.
On objects of regular geometry, we distribute points evenly.





De forma a criar, sempre, triângulos.
In order to always create triangles.

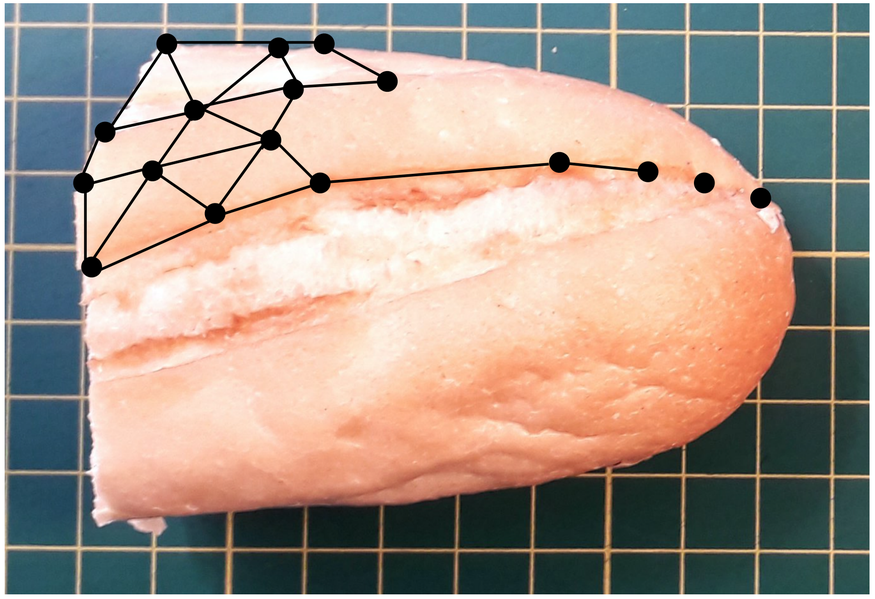
A distribuição de pontos, relaciona-se com a criação de uma grelha que nos dê relações e distâncias que possam ser transferidas para o papel.
The distribution of points is related to the creation of a grid that gives us relations and distances that can be transferred to paper.

A densidade de pontos, relaciona-se com a concentração de pontos, com a definição de detalhe (como na resolução de uma imagem). Mais pontos revelam mais detalhes.
The density of points is related to the concentration of points, with the definition of detail (like in image resolution). More points reveal more details.

Identificar pontos | Identify points

Pontos-chave | Key points

Identificar as zonas em que precisamos de identificar pontos específicos. Identificar as zonas em que precisamos de uma maior concentração de pontos.
Identify the areas where we need to identify specific points. Identify the areas where we need a higher concentration of points.



Mudanças na superfície do objeto implicam mudanças na quantidade / concentração de pontos.
Changes in the object's surface imply changes in the amount / concentration of points.

Zonas tendencialmente planas necessitam de pouca concentração de pontos. Zonas curvas necessitam de maior concentração de pontos.
Zones that tend to be flat require little concentration of points. Curved zones require a higher concentration of points.

Criar pontos | Create points

Pontos-chave | Key points

Geometria regular
Regular geometry

Identificar uma geometria regular que traduza o objeto regular. Como uma divisão em partes iguais ou regulares.
Identify a regular geometry that translates the regular object. Like a division into equal or regular parts.



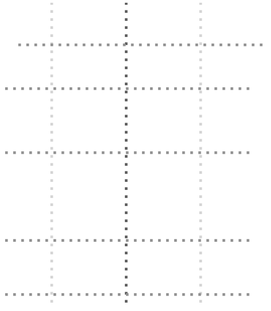




Criamos um ponto que sirva de inicio / referência e trabalhamos a partir daí, a partir de uma noção de linha vertical.
We create a point that serves as a starting point / reference and we work from there, from a notion of vertical line.

Colocamos mais pontos onde as curvas se acentuam.
We put more points where the curves are accentuated.

Criamos linhas de pontos regulares ao redor do objeto.
We create lines of regular points around the object.



Grelha regular de pontos, gera linhas verticais + linhas horizontais)
Regular grid of points, generates vertical lines + horizontal lines)

Criar pontos | Create points

Pontos-chave | Key points

Geometria irregular
Irregular geometry

Identificar uma geometria irregular que traduza o objeto irregular. Divisão feita pela identificação de pontos-chave e concentração de pontos (relacionados com diferentes superfícies).
Identify an irregular geometry that translates the irregular object. Like a division into equal or regular parts. Division made by the identification of key points and concentration of points (related to different surfaces).







Identificamos pontos-chave que denunciem mudanças na geometria do objeto (Zonas planas, zonas de curvatura acentuada,…).
We identify key points that denote changes in the object's geometry (flat zones, areas of marked curvature, ...).

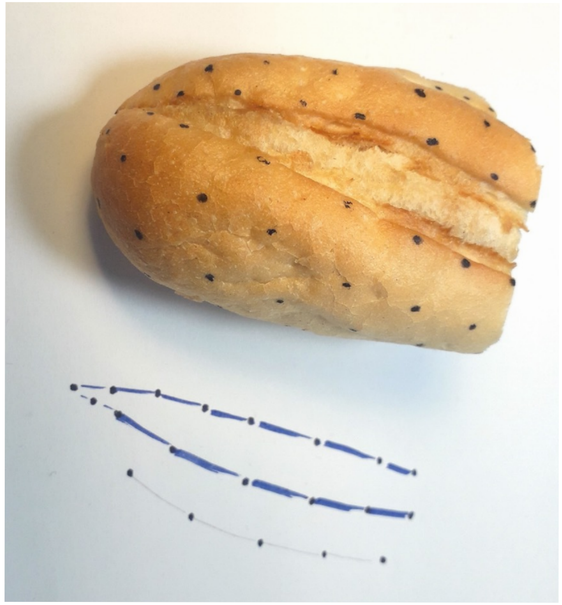
Colocamos menos pontos nas zonas mais planas.
We put less points on the flatter areas.

Onde a superfície muda, muda a geometria do objeto, muda a concentração de pontos.
Where the surface changes, the geometry of the object changes, the concentration of points changes.

As superfícies vão ser criadas por triângulos. Quanto maior o pormenor, maior a concentração de pontos que vão gerar triângulos.
The surfaces will be created by triangles. The greater the detail, the greater the concentration of points that will generate triangles.

Triangulação | Triangulation
Planificação | Planification

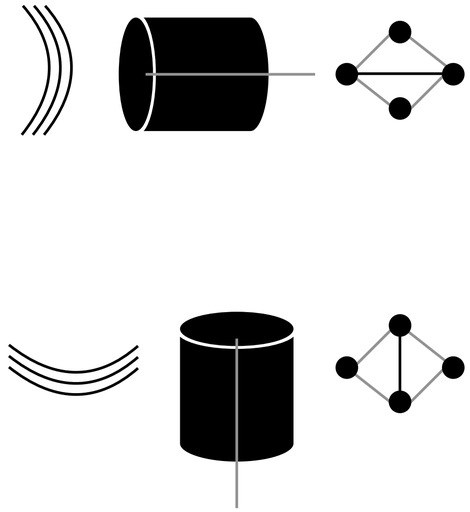
Transportar os pontos identificados no objeto para o papel.
Transport the points identified on the object to the paper.



1. Desenhar os triângulos no objeto.
Draw the triangles on the object.

Será util desenhar os traços dos triângulos com uma cor diferente da dos pontos, para se ter uma melhor perceção do trabalho e das decisões.
It will be useful to draw the lines of the triangles with a different color than the dots, to have a better perception of the work and the decisions.

Deve-se pensar sobre o volume, sobre o sentido do volume.
One must think about the volume, about the direction of the volume.

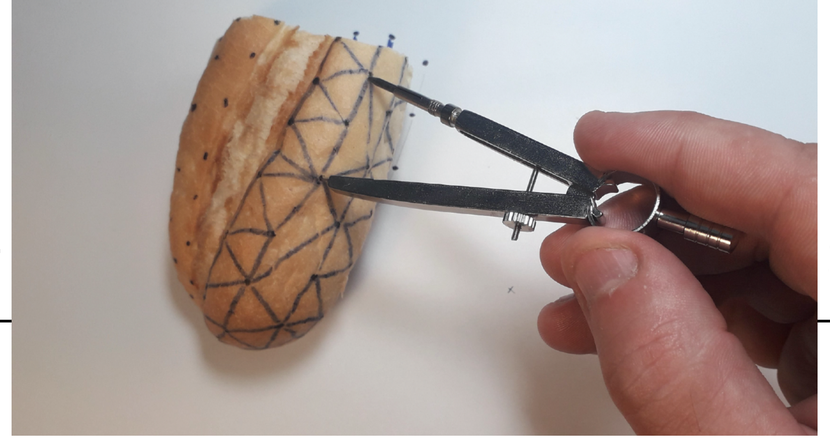


2. Decidir a direção do vértice do triângulo. Será uma decisão a tomar pela observação da forma que vai ser representada. Em que direção é mais util que se situe a dobra do papel, em relação à volumetria do objeto real? Os riscos desenhados irão tornar-se vincos.
Decide the direction of the vertex of the triangle. It will be a decision to be made by observing the form that will be represented. In what direction is it most useful to place the fold of the paper, in relation to the volume of the real object? The drawn lines will become creases.



Triangulação | Triangulation
Planificação | Planification

Transportar os pontos identificados no objeto para o papel.
Transport the points identified on the object to the paper.

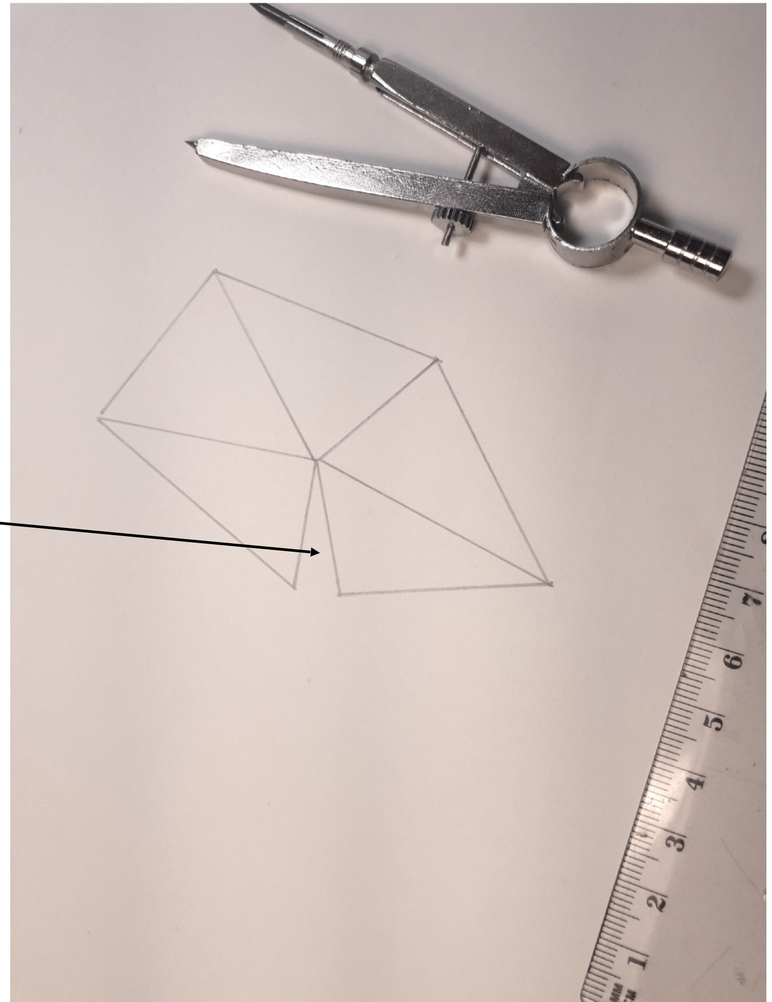


3. Transportar as medidas para o papel.
Transport the measurements to the paper.





Ao transportar as medidas para o papel, partes da figura poderão ficar abertas por estarmos a passar algo tridimensional para bidimensional.
When transporting the measurements to the paper, parts of the figure may be left open because we are moving from three-dimensional to two-dimensional.

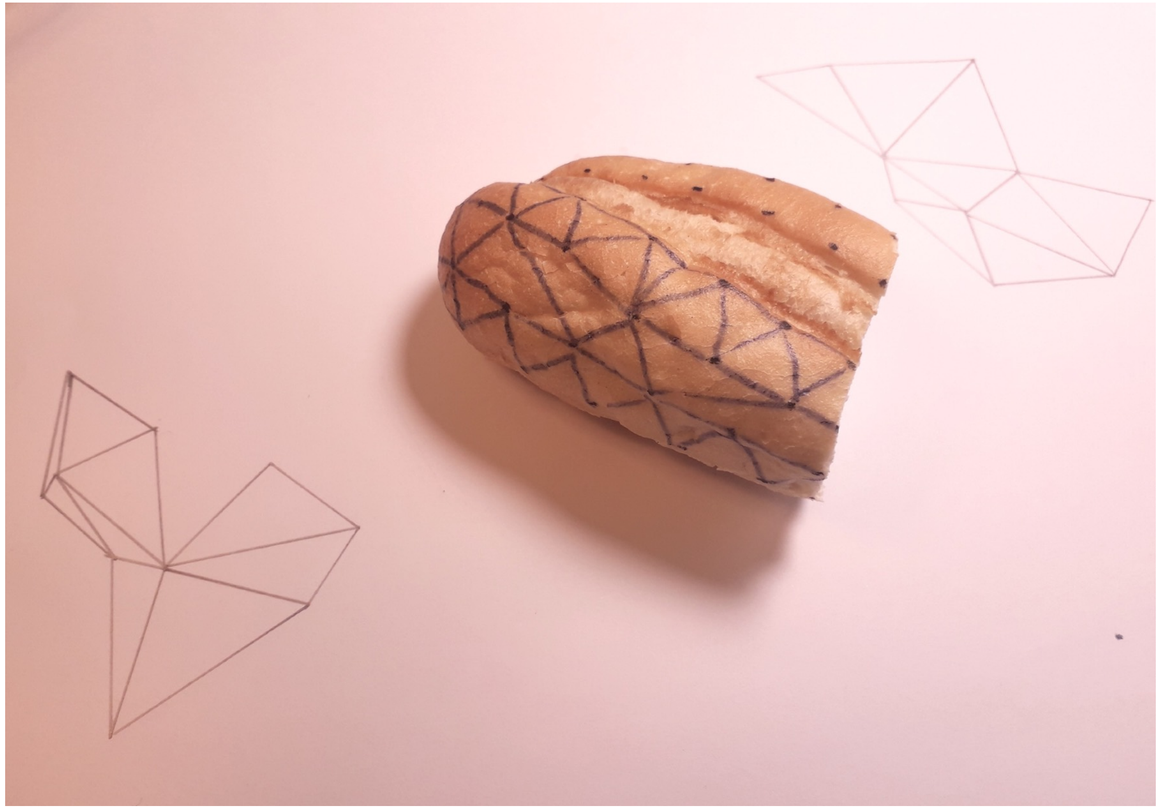


Notas: O objeto de papel poderá ter de ser criado por partes, que serão coladas para criar o todo.
Note: The paper object may have to be created by parts, which will be glued together to create the whole.

Pode ser necessário fazer uma adaptação de alguns dos pontos identificados anteriormente.
It may be necessary to adapt some of the points previously identified.

Será útil ir verificando se as medidas das arestas no objeto real correspondem às medidas das arestas no papel.
It will be useful to check that the edge measurements on the real object correspond to the edge measurements on the paper.

Transportar os pontos identificados no objeto para o papel.
Transport the points identified on the object to the paper.



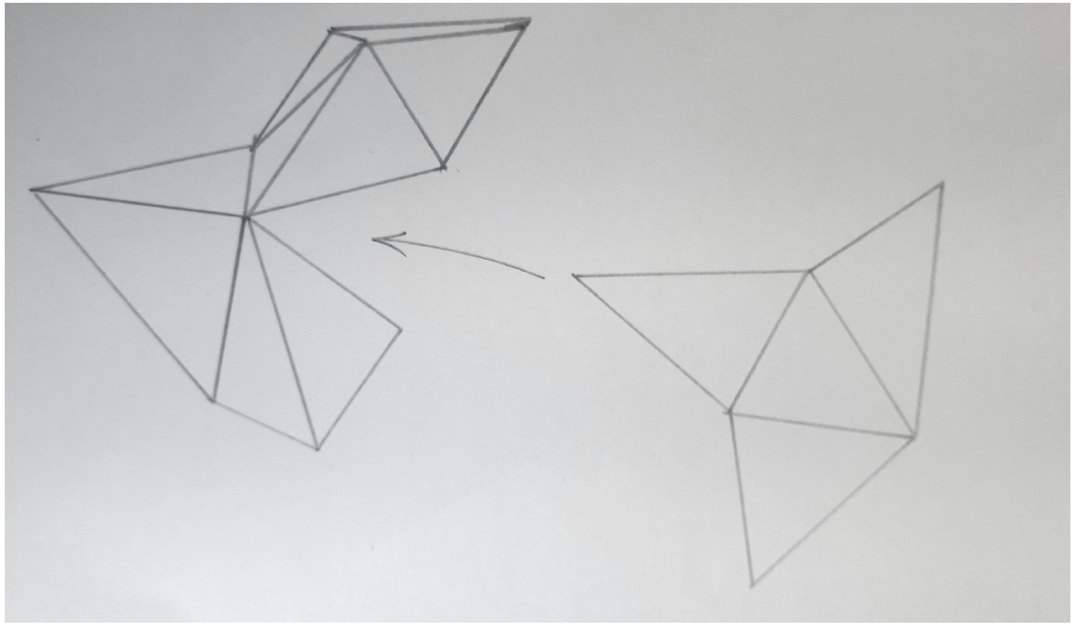
A geometria do objeto, provavelmente vai pedir que o objeto seja trabalhado em peças separadas, por não permitir resolver a totalidade do objeto por meio de dobras e cortes.
The geometry of the object will probably ask for the object to be worked in separate pieces, as it does not allow to solve the entire object through folds and cuts.

4. Organizem o trabalho e registem o que já está feito ou em processo. O trabalho poderá ser complexo e precisa de ser bem estruturado para que não se baralhem na execução.
Organize the work and record what is already done or in process. The work can be complex and needs to be well structured so that it does not get in the way of execution.

Trabalhem sempre a olhar para o objeto a partir do mesmo ponto de vista.
Always work looking at the object from the same point of view.

Nota: Trabalhar o objeto por partes permite corrigir mais facilmente possíveis erros de medidas na parte, sem afetar o todo.
Working the object in parts allows you to more easily correct possible measurement errors in the part, without affecting the whole.

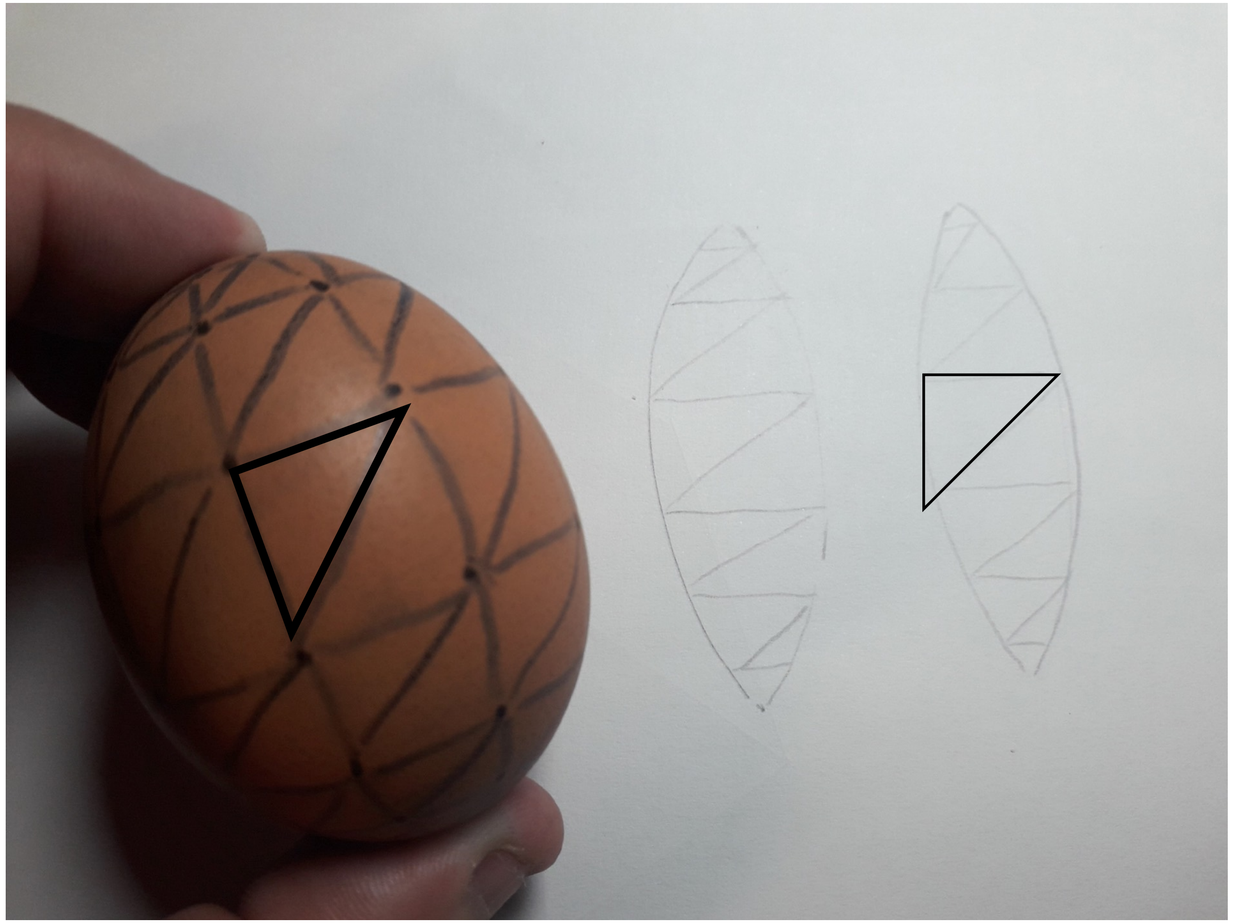
Transportar os pontos identificados no objeto para o papel.
Transport the points identified on the object to the paper.



5. Ao começar uma parte a ser realizada em separado, identifiquem a aresta que será comum à peça onde a peça nova será colada / unida e trabalhem a partir dessa aresta inicial para construir a nova parte.
When starting a part to be built separately, identify the edge that will be common to the part where the new part will be glued / joined and work from that initial edge to build the new part.

Geometria regular
Regular geometry

Transportar os pontos identificados no objeto para o papel.
Transport the points identified on the object to the paper.



Encontrar os triângulos.
Find the triangles.

Criar tiras separadas para cada parte.
Create separate strips for each part.

Atenção, que cada tira só irá encaixar bem com a tira que corresponda à parte seguinte.
Attention, that each strip will only fit well with the strip that corresponds to the next part.

Transferir as partes para o papel final e adicionar abas.
Transfer the parts to the final paper and add flaps.

Marcas e vincos devem ser realizados na parte de trás da folha de papel, para que que não seja visível o papel marcado ou “ferido”.
Marks and creases must be made on the back of the sheet of paper, so that the marked or “injured” paper is not visible.

Dobrar o papel deixando que a parte vincada fique no lado interior da folha ajuda a evitar que as fibras do papel quebrem.
Folding the paper allowing the creased part to remain on the inside of the sheet helps to prevent the paper fibers from breaking.

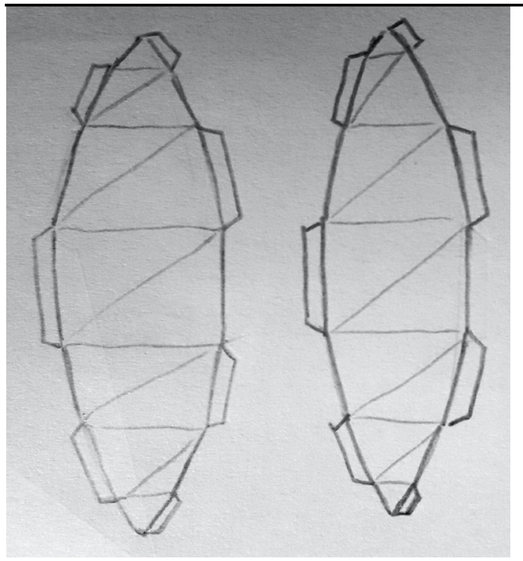
Opção 1: Reproduzir o desenho em espelho no verso da folha.
Option 1: Reproduce the drawing, mirrored, on the back of the sheet.

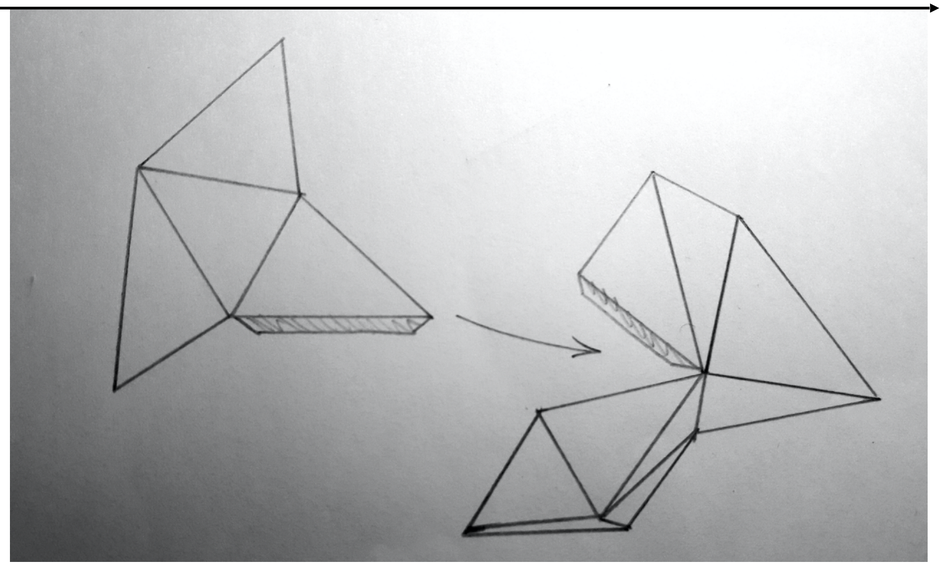
Opção 2: Com a folha do esquema da triangulação colocado sobre a folha final, furar com o compasso os pontos onde as linhas se cruzam. Na parte de trás da folha final, unimos os pontos fazendo o desenho em espelho. O desenho pode ser feito diretamente por vincagem da folha.
Option 2: With the triangulation diagram sheet placed on the final sheet, drill with the compass the points where the lines intersect. At the back of the final sheet, we join the dots making the drawing, mirrored. The drawing can be done directly by creasing the sheet.

Opção 3: Digitalizar os desenhos das peças, espelhar e imprimir (Numa outra folha ou diretamente na parte de trás da folha final).
Option 3: Scan the drawings of the pieces, mirror the drawings and print (On another sheet or directly on the back of the final sheet).

No processo de transferência dos desenhos para a folha final pode-se prender os desenhos das peças com pedaços de fita-cola e reproduzi-los de seguida.
In the process of transferring the drawings to the final sheet, you can attach the drawings of the pieces with pieces of adhesive tape and reproduce them immediately.

Transferir as partes para o papel final e adicionar abas.
Transfer the parts to the final paper and add flaps.





Definir quais as partes que ganham abas, para colagem.
Define which parts get tabs, for gluing.

As abas ficam escondidas dentro do objeto tridimensional.
The tabs are hidden inside the three-dimensional object.

Ficando intercaladas, as abas ajudam a distribuir o esforço por todo o objeto.
Being interleaved, the tabs help to distribute the effort throughout the object.

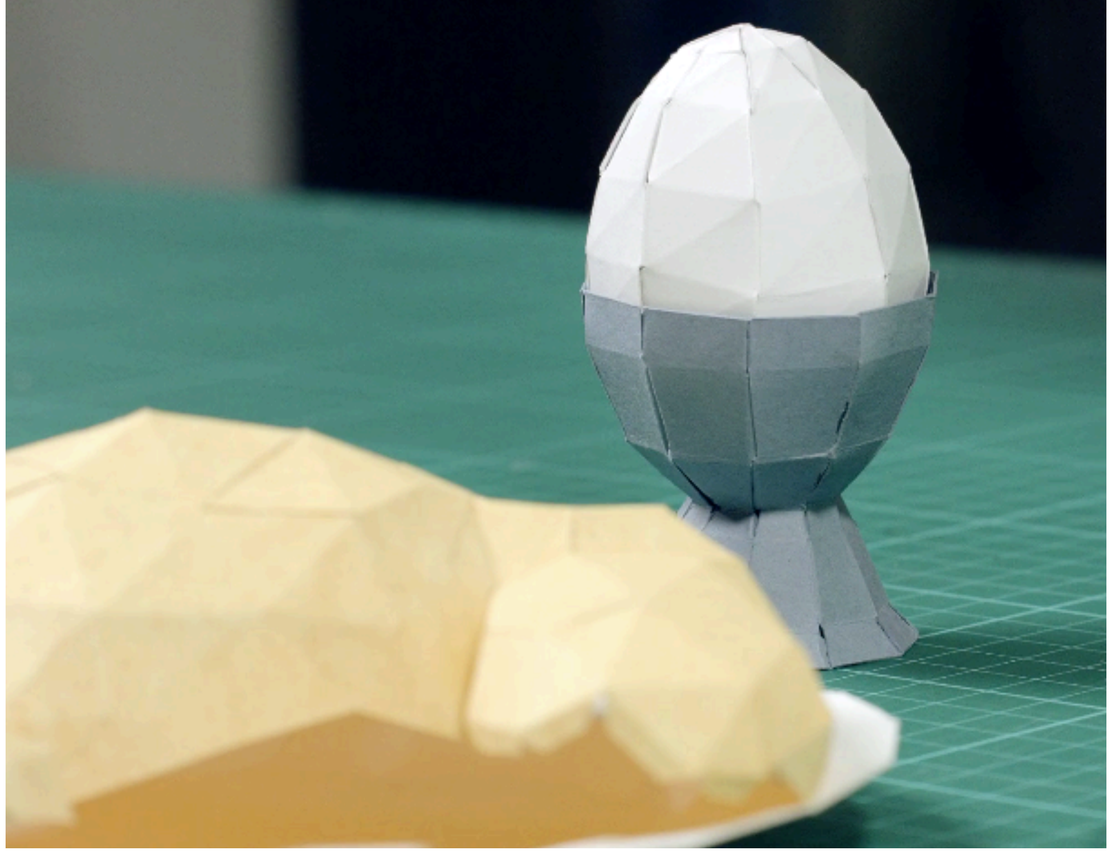
Tenham em conta que as abas têm de conseguir caber debaixo das arestas onde vão ser coladas.
Bear in mind that the flaps must be able to fit under the edges where they are going to be glued.

Ao fazer o corte e a montagem, é bom ter as peças numeradas ou marcadas, de forma a melhor entender que peça une a uma outra e em que aba.
When making the cut and the assembly, it is good to have the parts numbered or marked, in order to better understand which part joins another one and in which flap.

Montar e colar as partes.
Assemble and glue the parts.

Na fase da montagem, as dobras poderão ter de ser afinadas, tornado-se formas côncavas ou formas convexas.
During the assembly phase, the folds may have to be sharpened, becoming concave shapes or convex shapes.

Montar e colar | Assemble and glue





Conselho: Não escolham objetos excessivamente complicados. Não escolham objetos pré-feitos encontrados online. Façam uma boa escolha acerca da interação entre o objeto poliedro e o uso dos recortes (a favor da metáfora / comunicação).

Advice: Do not choose overly complicated objects. Do not choose pre-made objects found online.
Make a good choice about the interaction between the polyhedron object and the use of the cut-outs (in favor of metaphor / communication).

nuno.marques@ipleiria.pt

Examples from previous years

(Different exercise, exploring poliedric illustration and stencil)







THINK ABOUT POSSIBILITIES

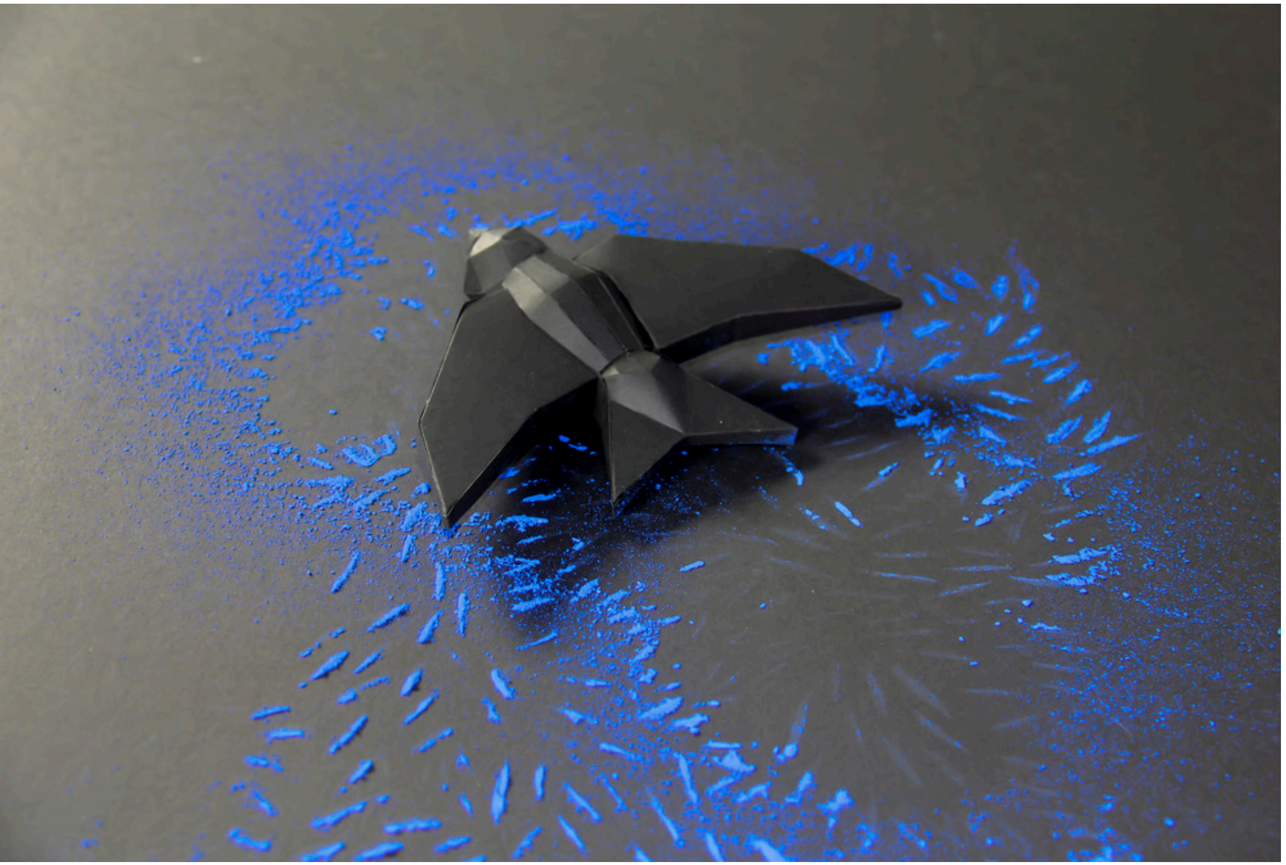
Exemplos - Examples



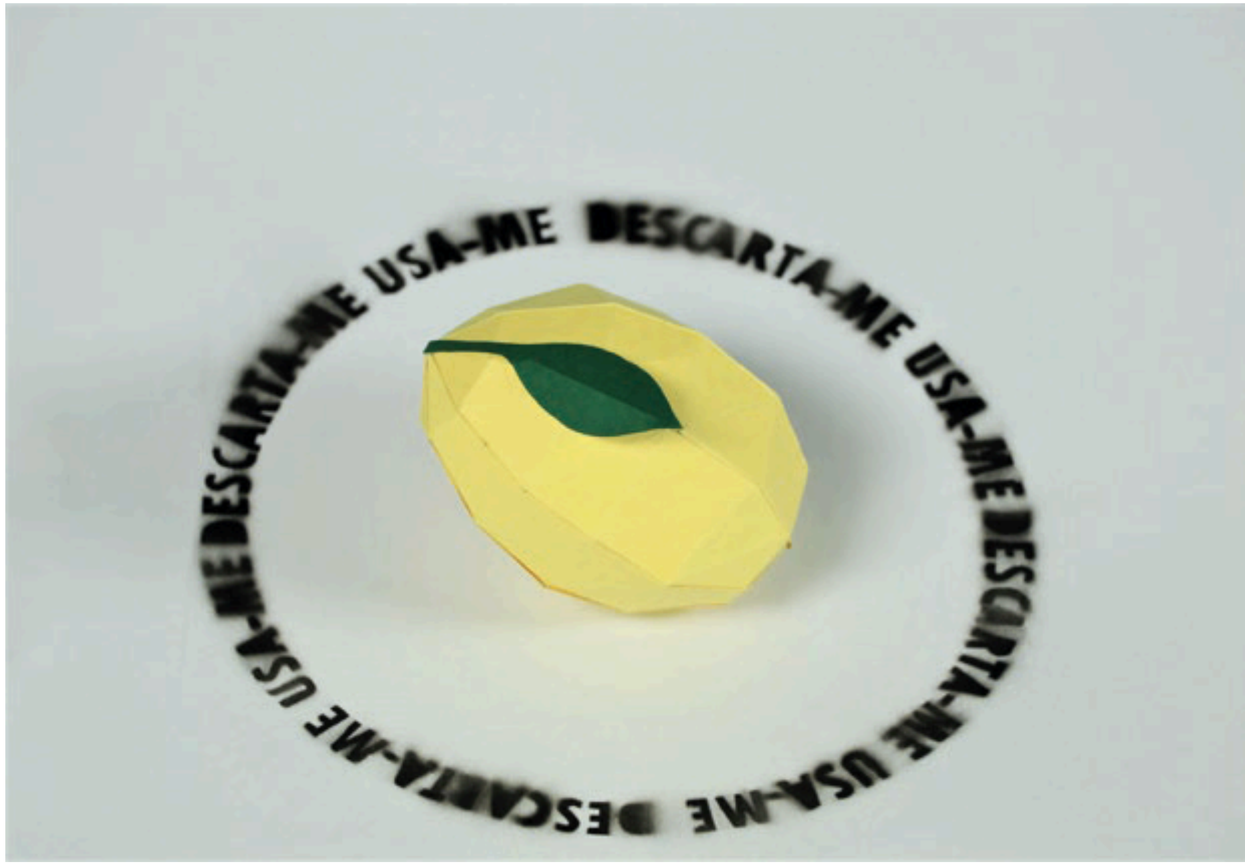
Ana Simão



Afonso Santos



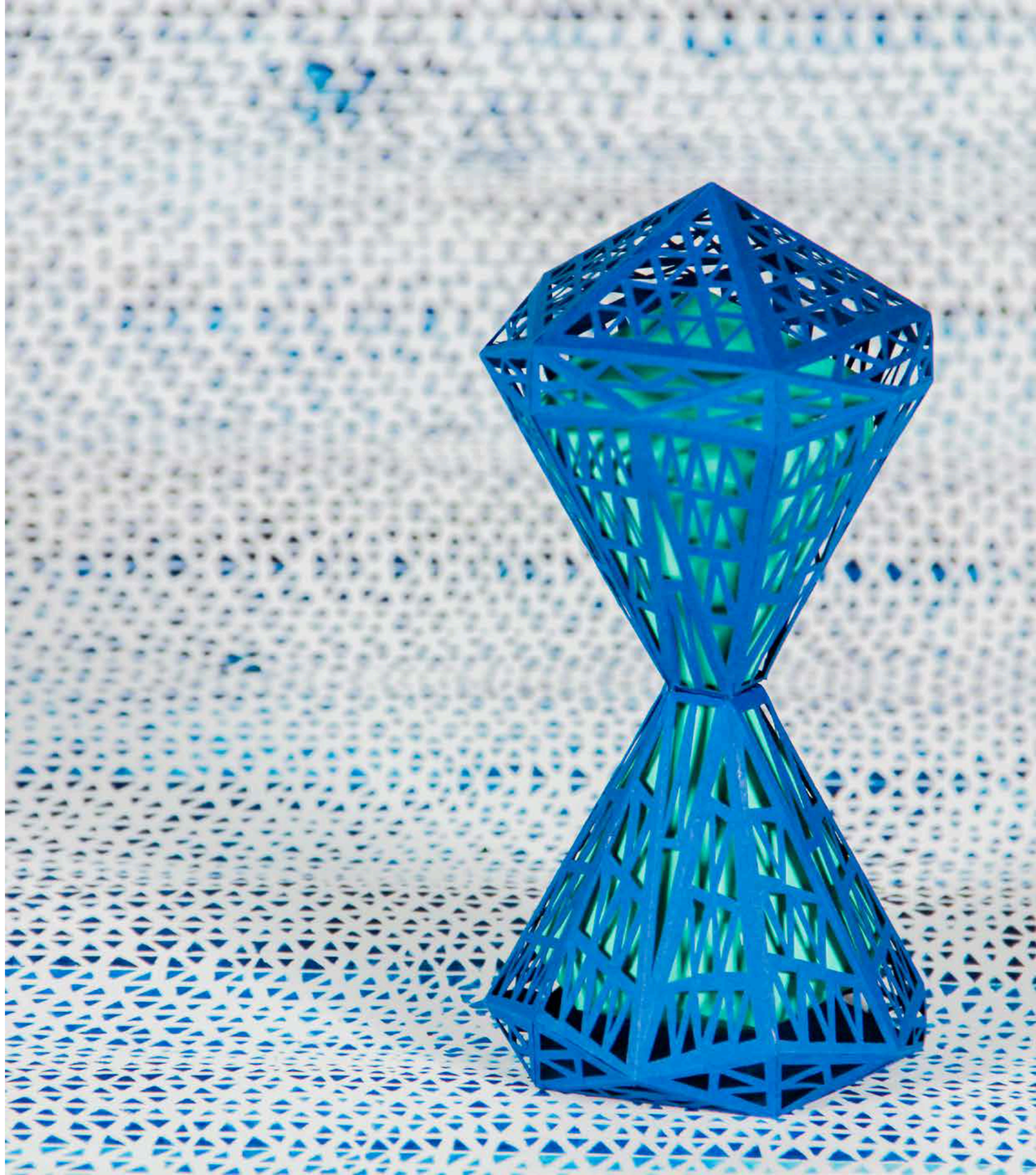
Diana Duarte



Daniela Ferreira



Fábio Casaleiro



Sidónio Silva

Exemplos - Examples

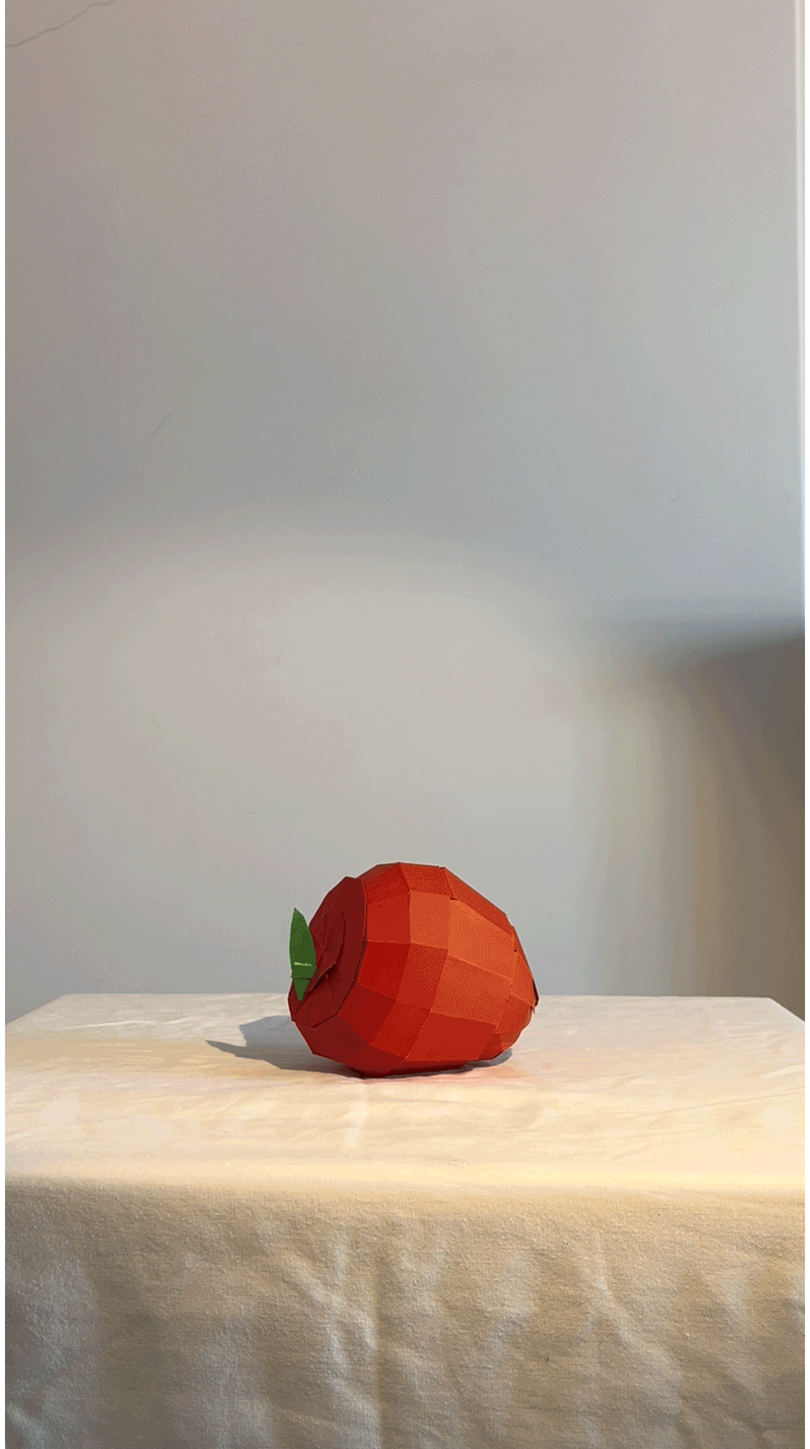


Paula Roset



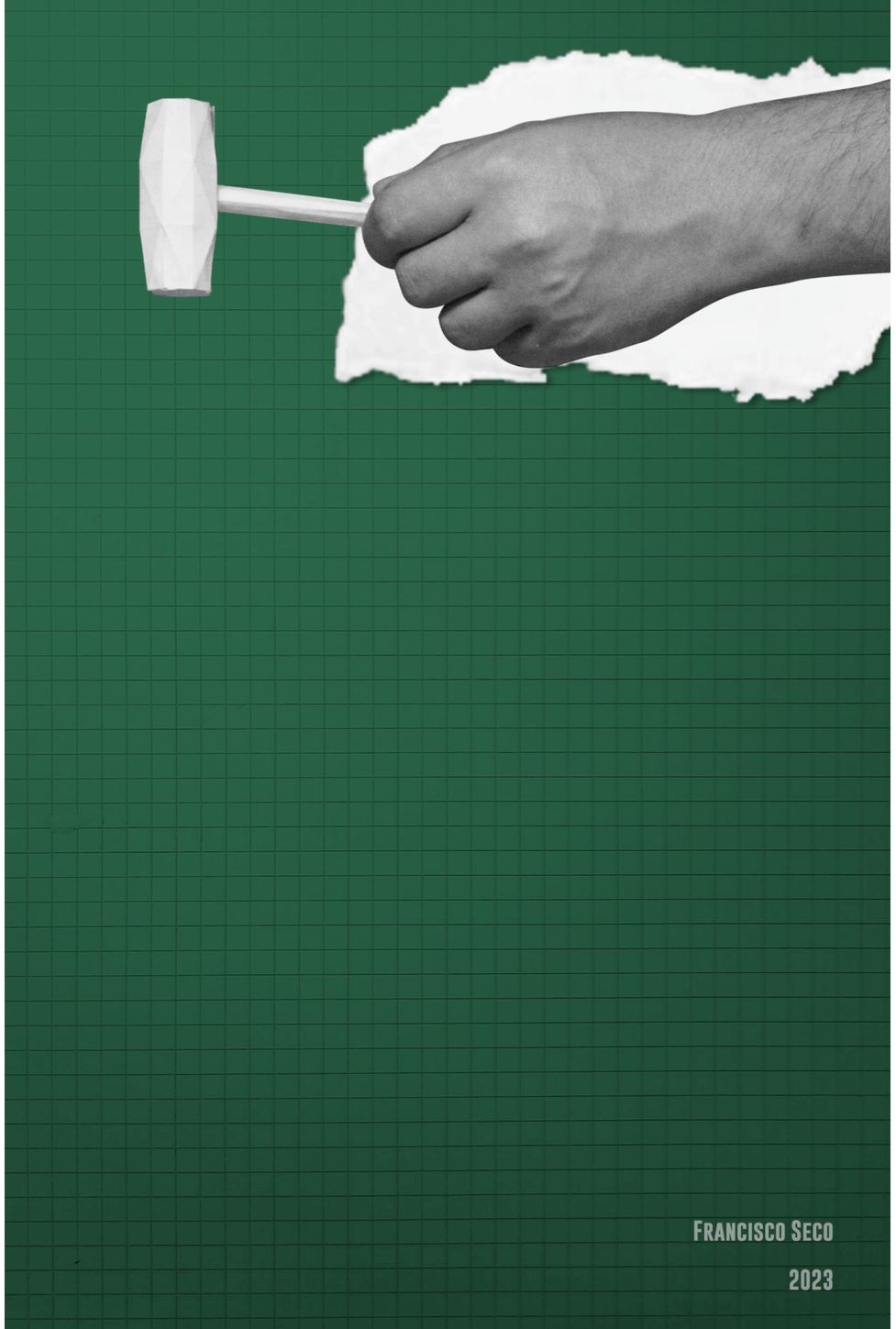
Maiara Gregório

Animated Poster



Sohaila Elmoataz

Animated Poster



Francisco Seco

Animated Poster



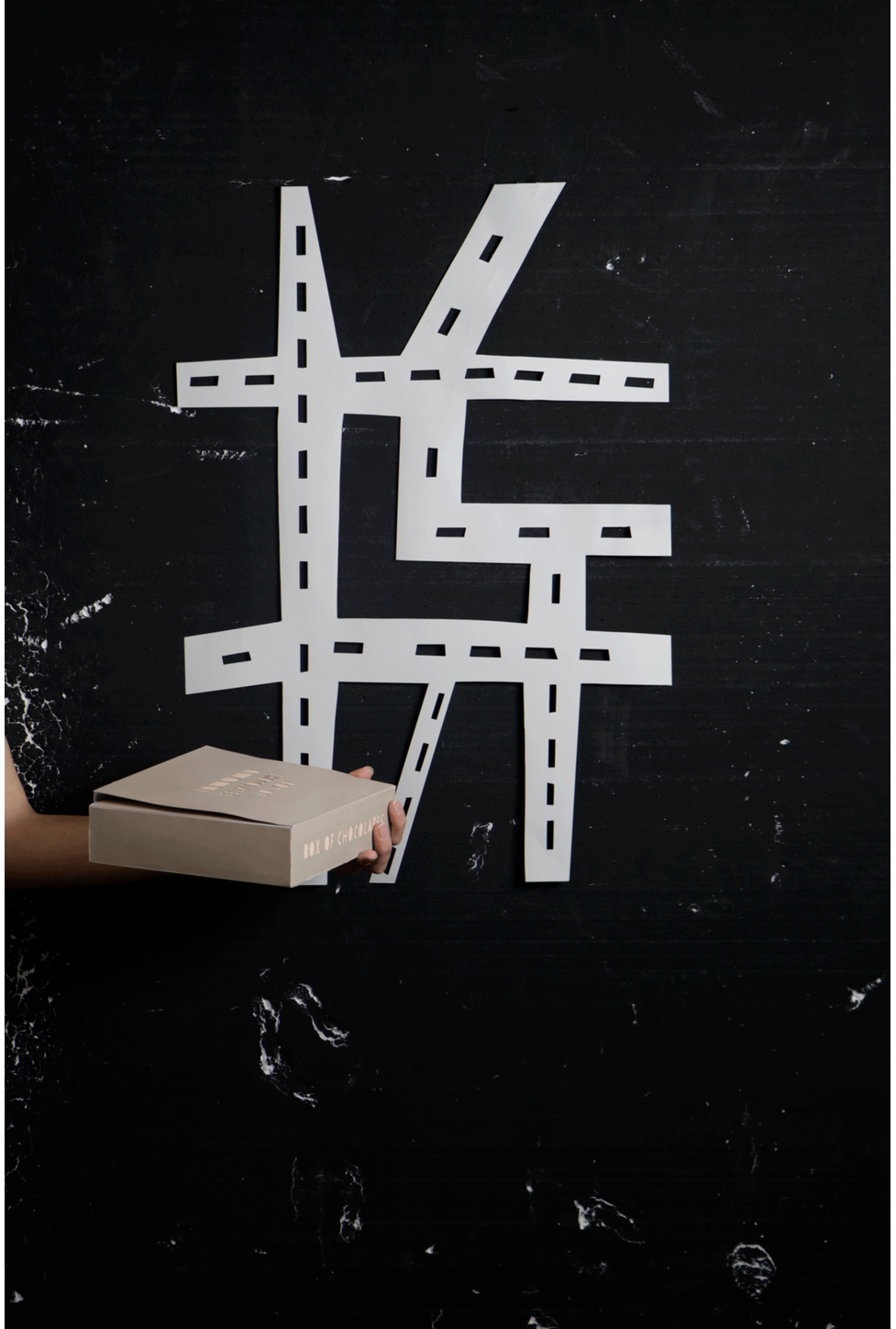
Leonor Reis

Animated Poster



Sílvia Brízio

Animated Poster



Valentina Vecchio