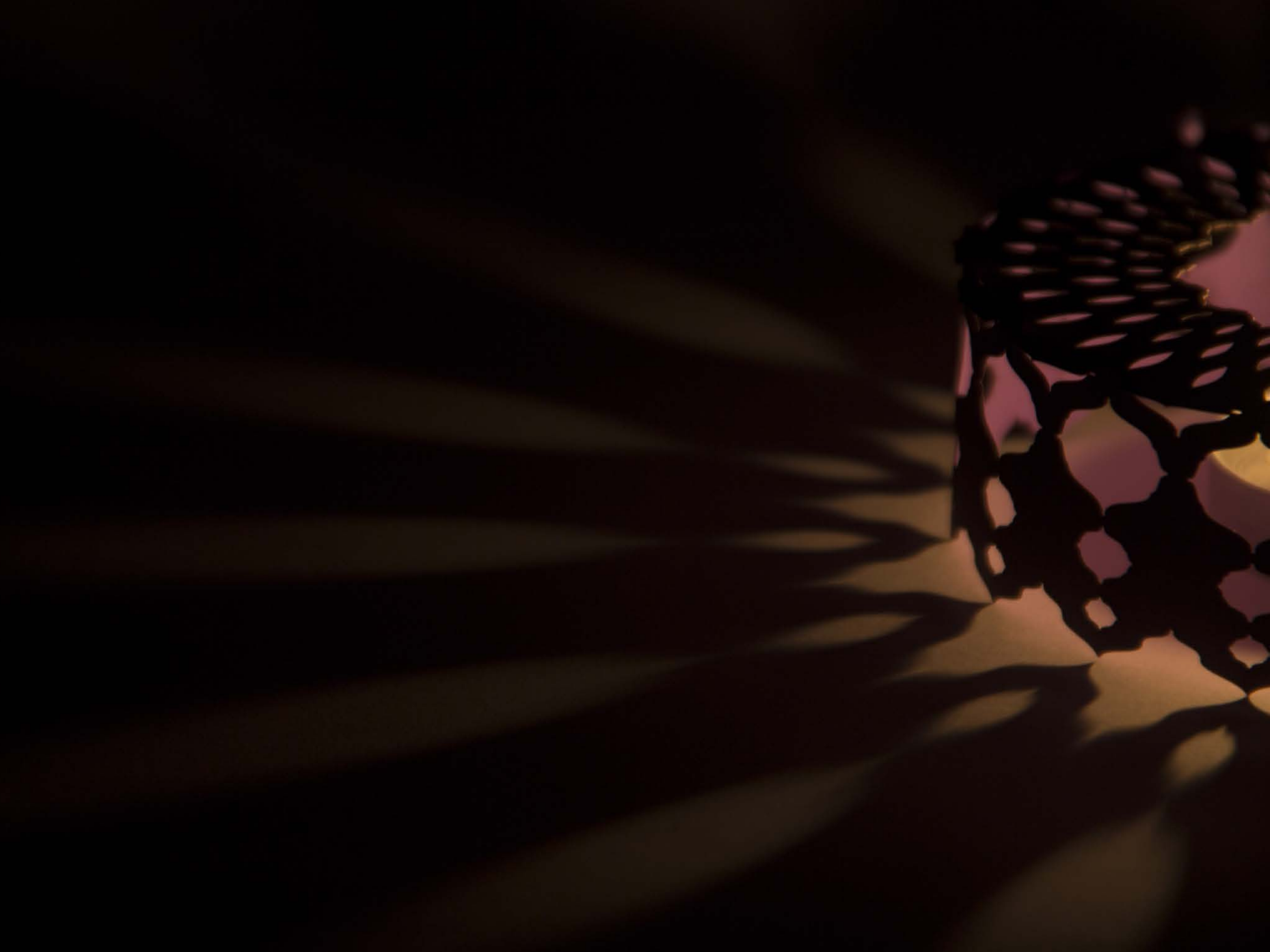




Exploring Shadows

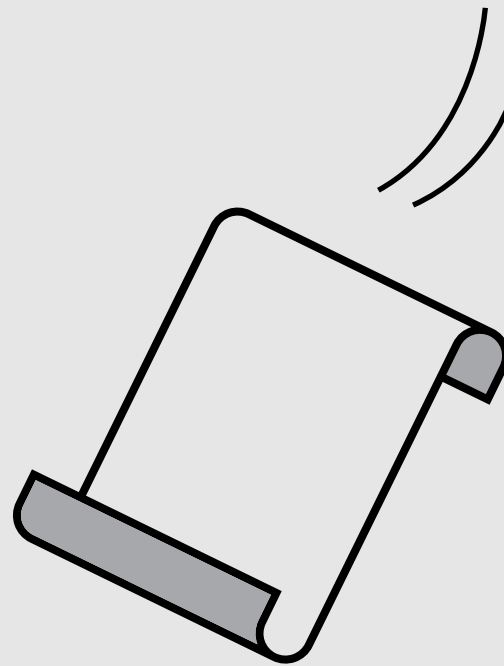
*An interaction
between Light and Paper*

Prof. Mandar Rane

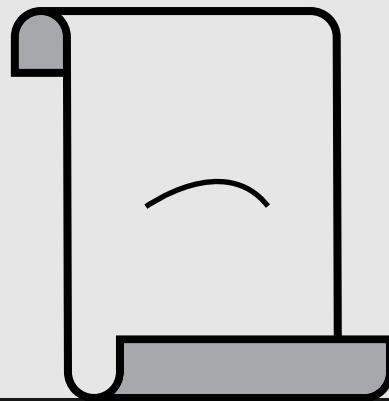
Kalagouda Patil | 156250010 | Visual Communication

Once upon a time, there was...

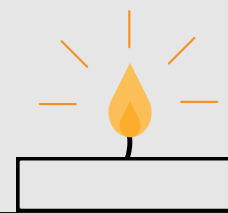
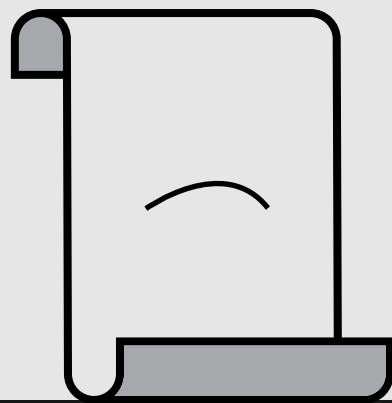
then, a *Paper* came into existence.



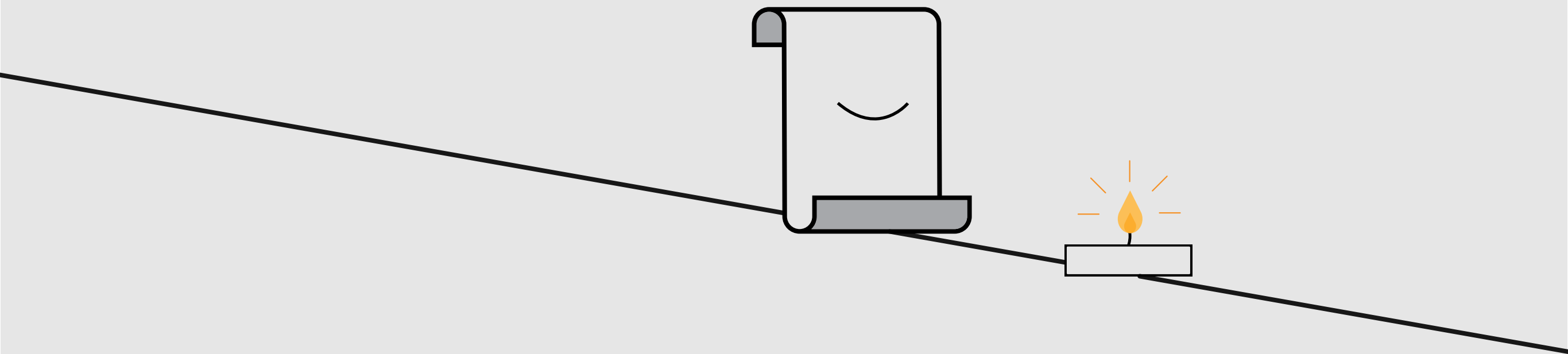
Paper was lonely and bored.



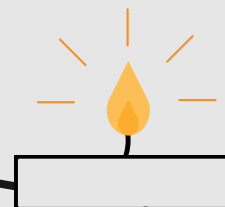
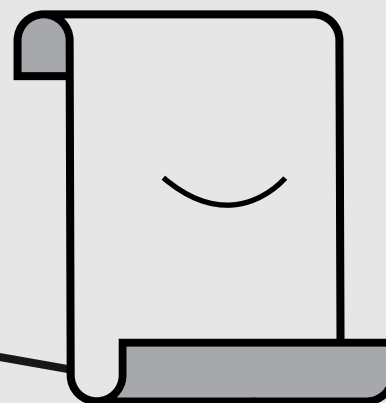
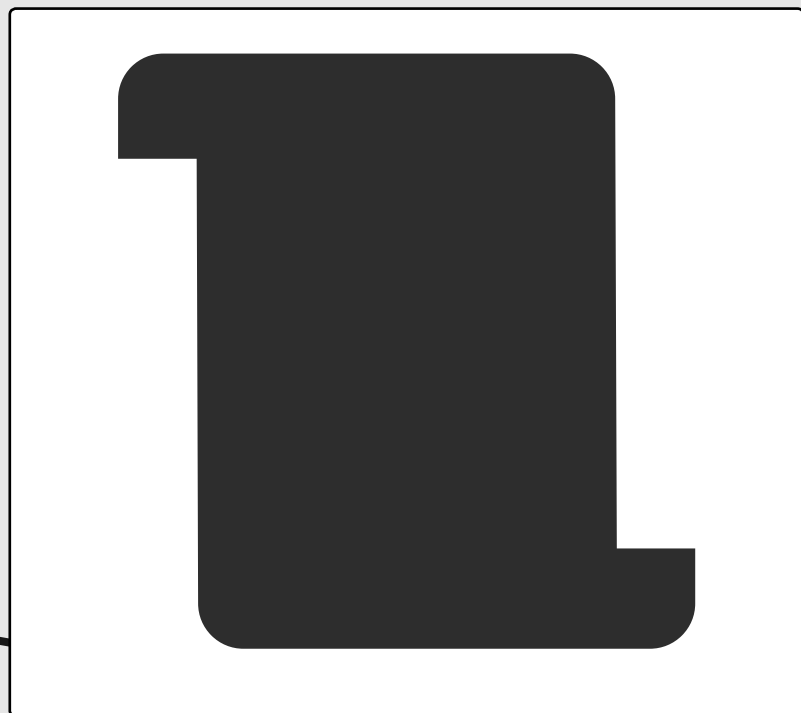
One fine day he met a *burning Candle*.



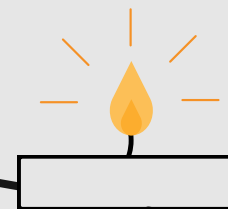
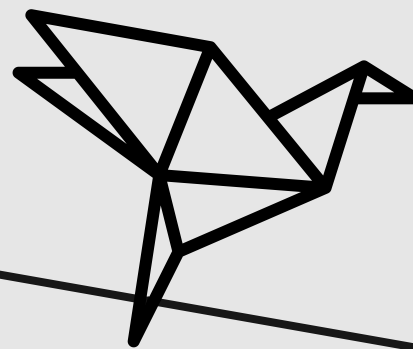
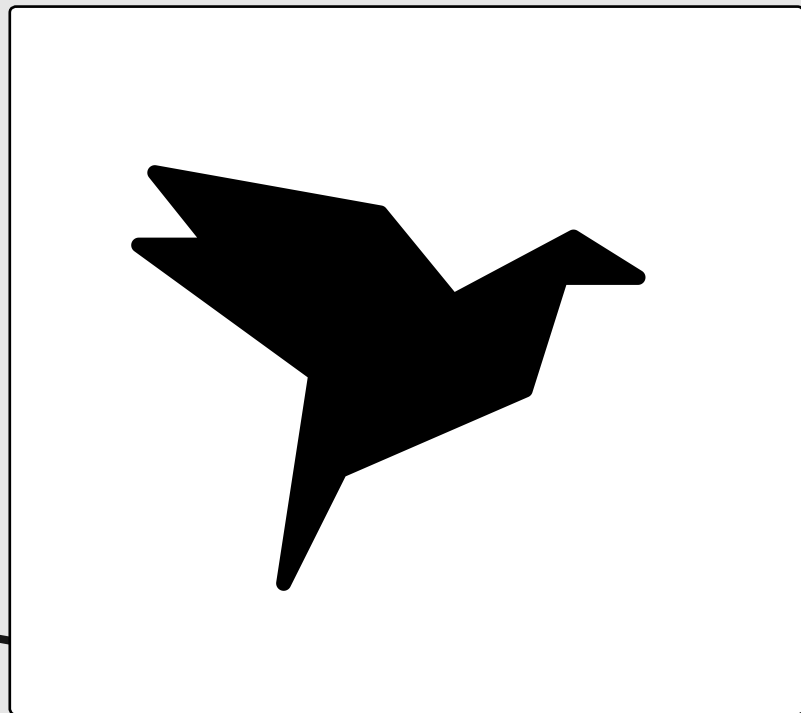
When they interacted...



...*Shadow* happened on
a plane called *Screen*.



As they changed the behaviour of their interaction, the *Shadow* changed.



4 characters of the story

4 characters of the story
elements of the system

4 characters of the story
elements of the system

1. Light Source
2. Object (paper)
3. Plane
4. Shadow

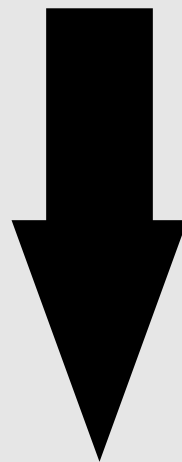
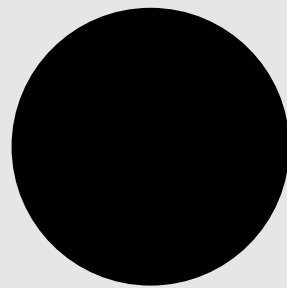
Exploration of such interaction
between these 4 elements.

Exploration

3 approaches...

Exploration 1

Deep

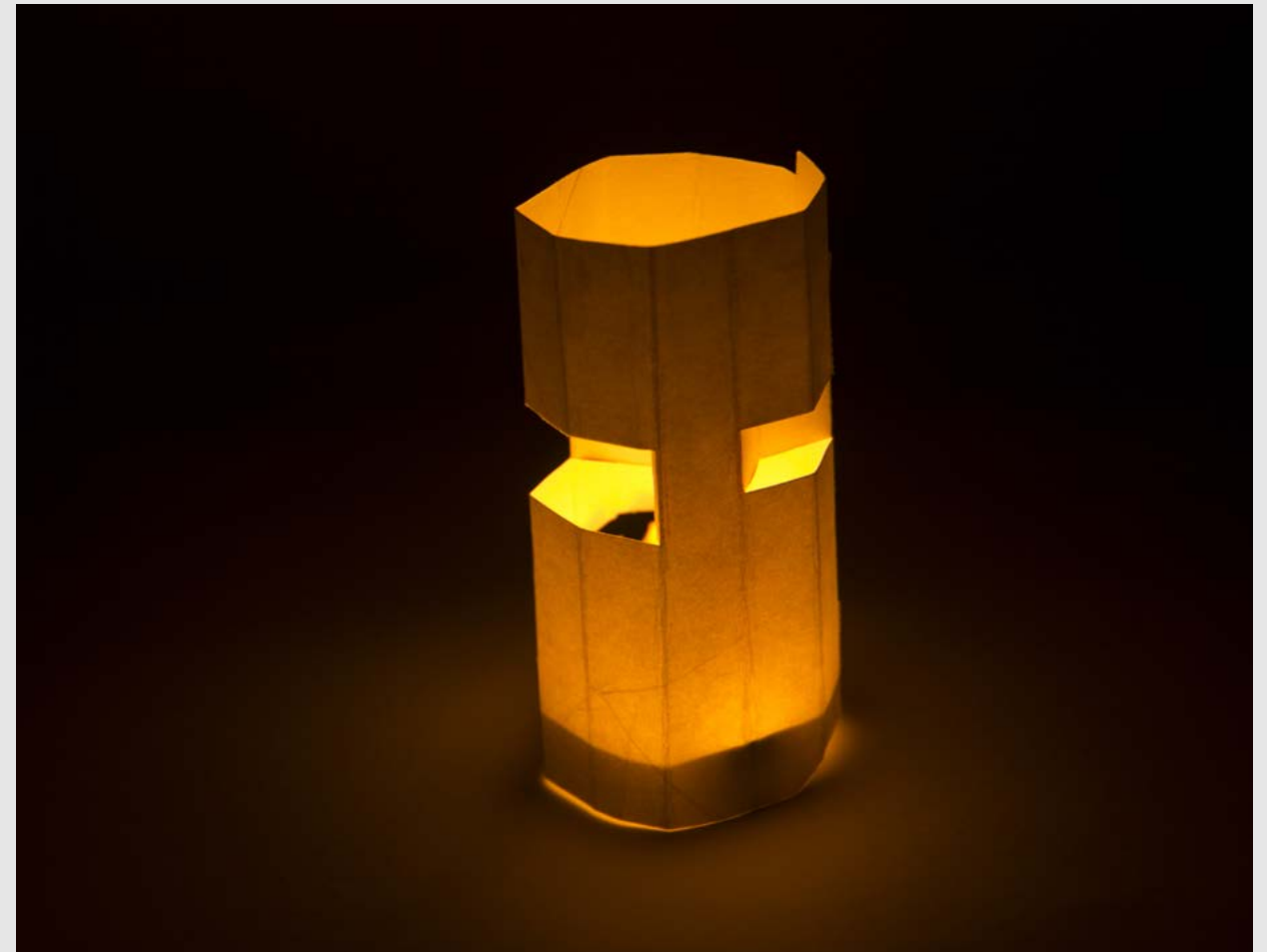
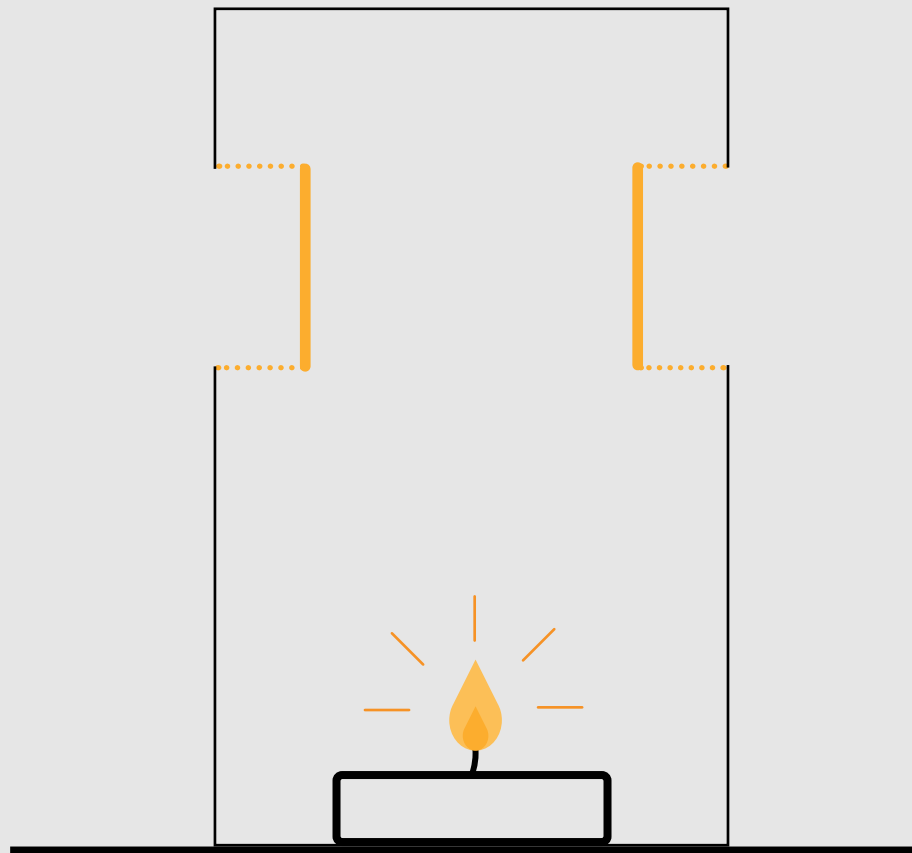














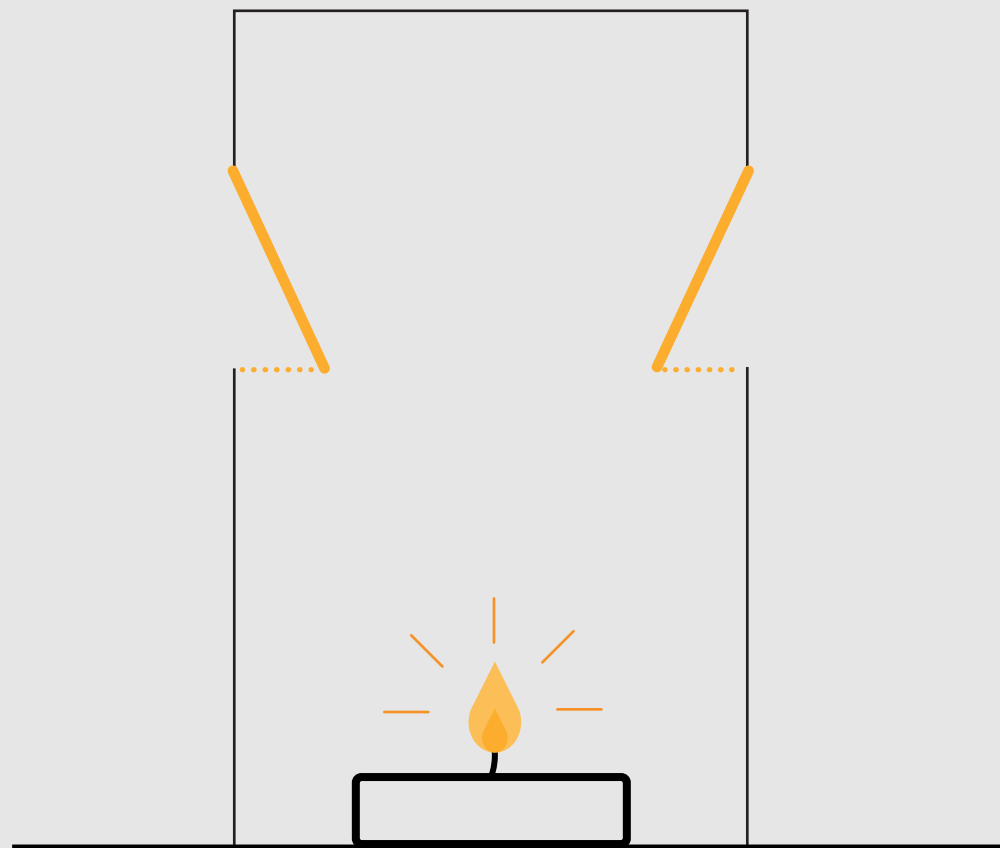






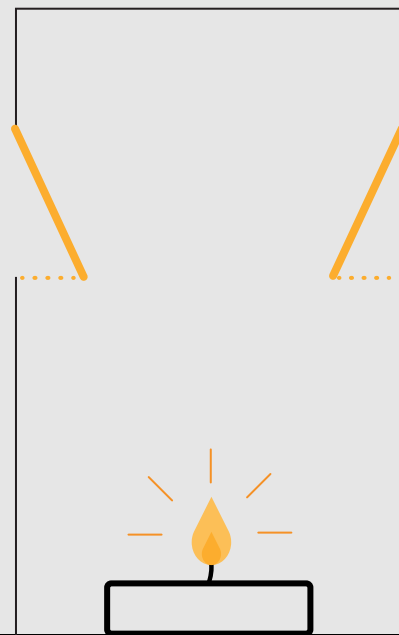






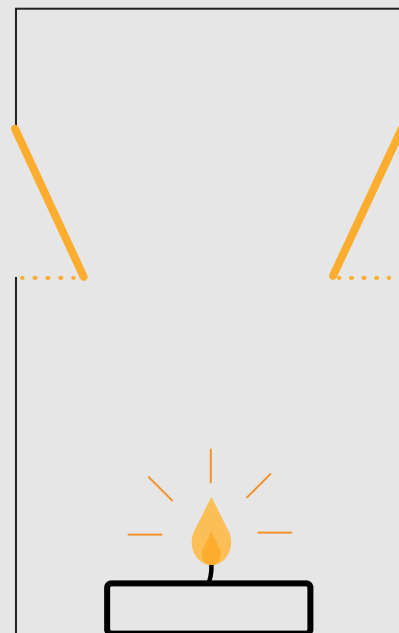




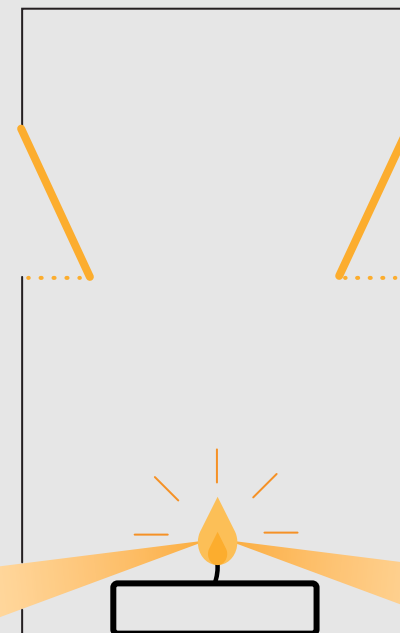


This portion
is blocking
large amount
of light.



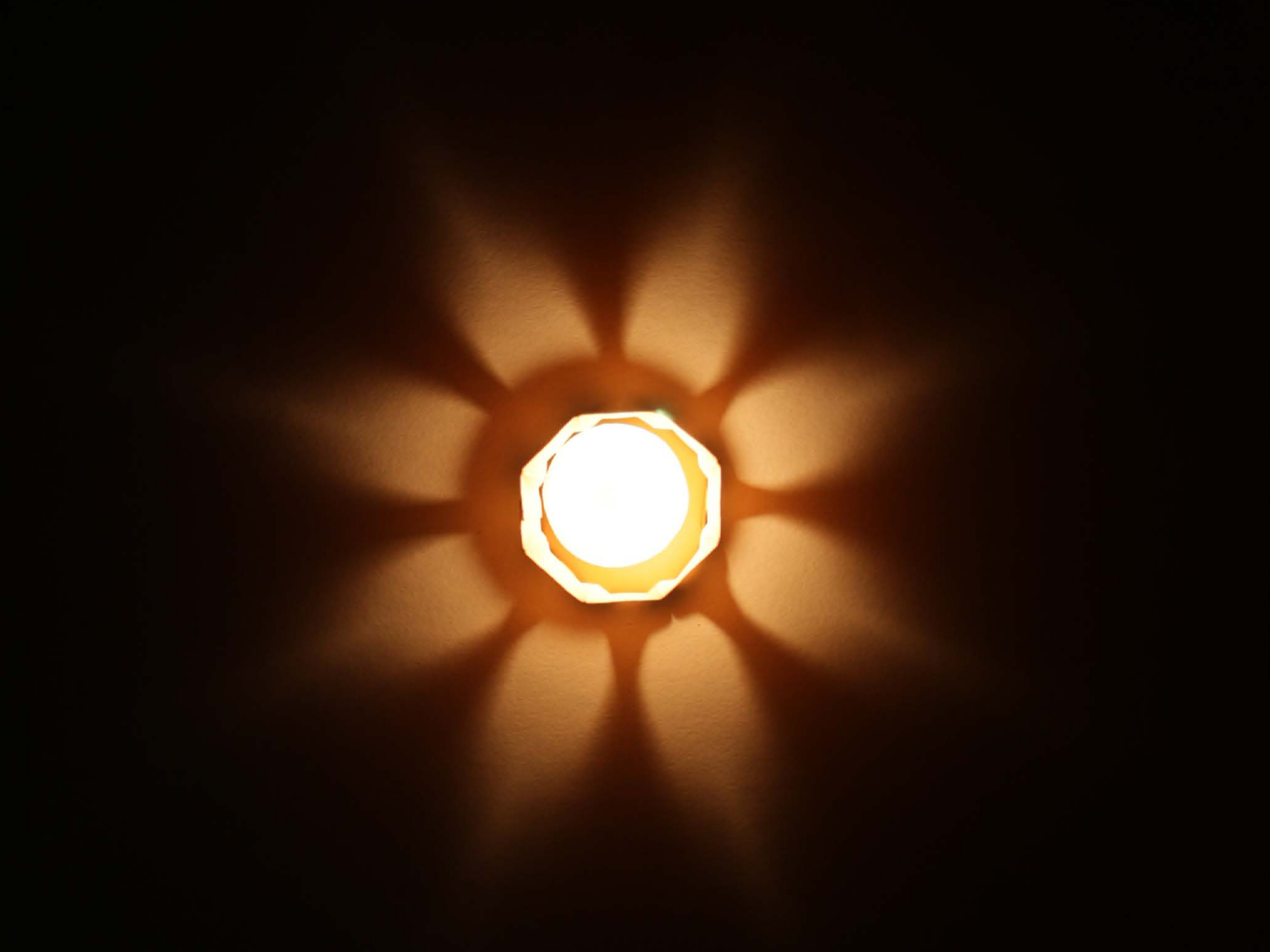


This portion
is blocking
large amount
of light.



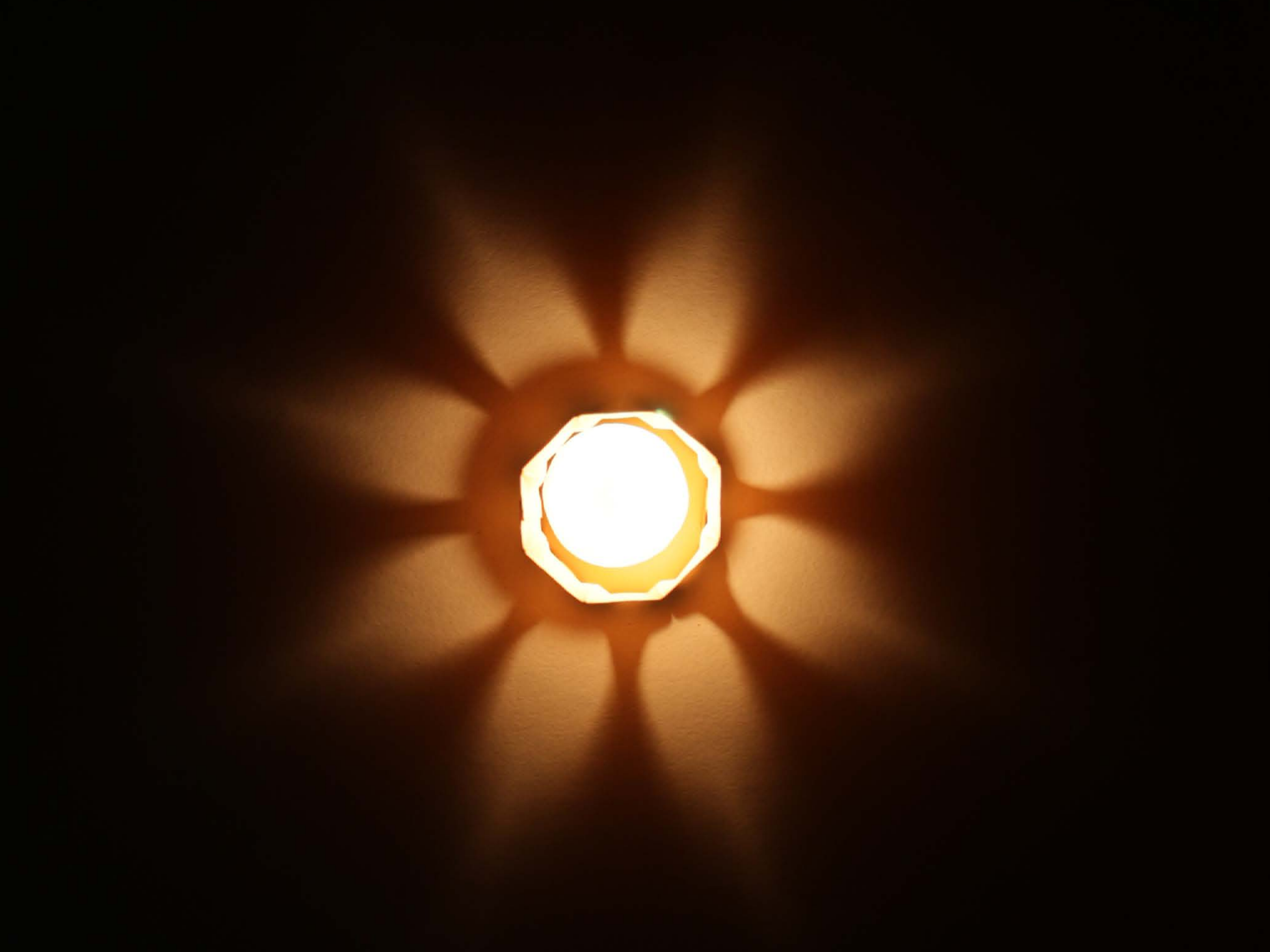




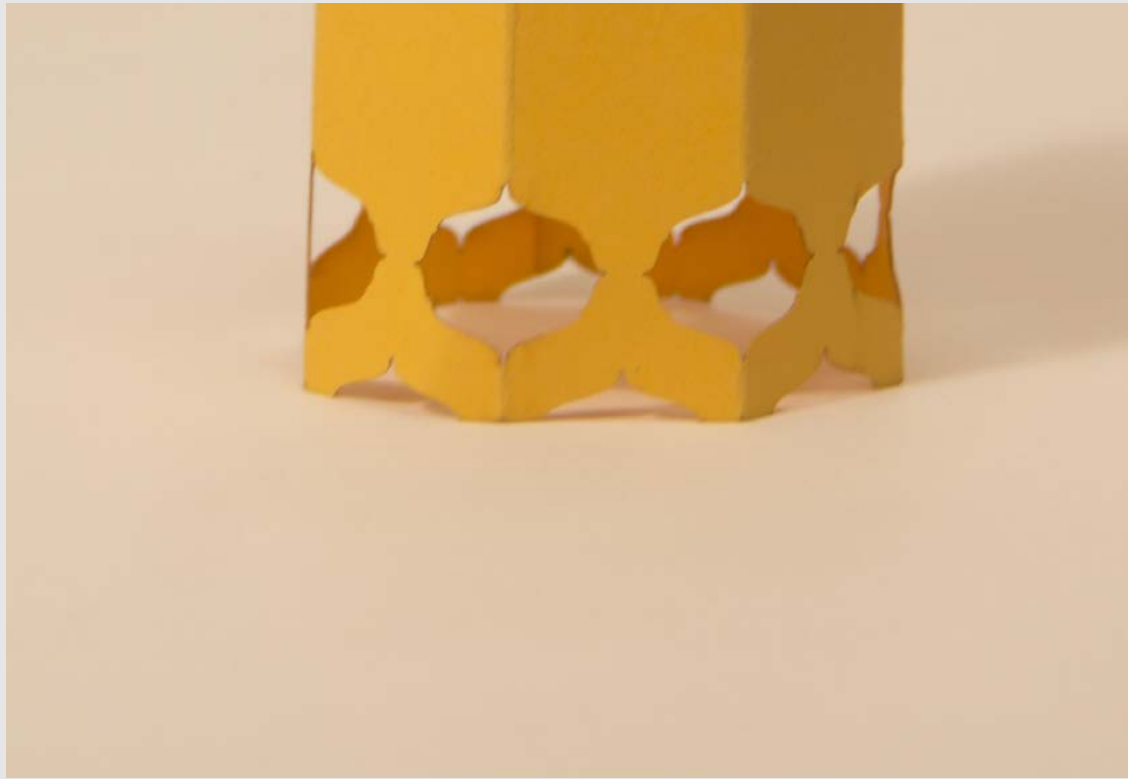


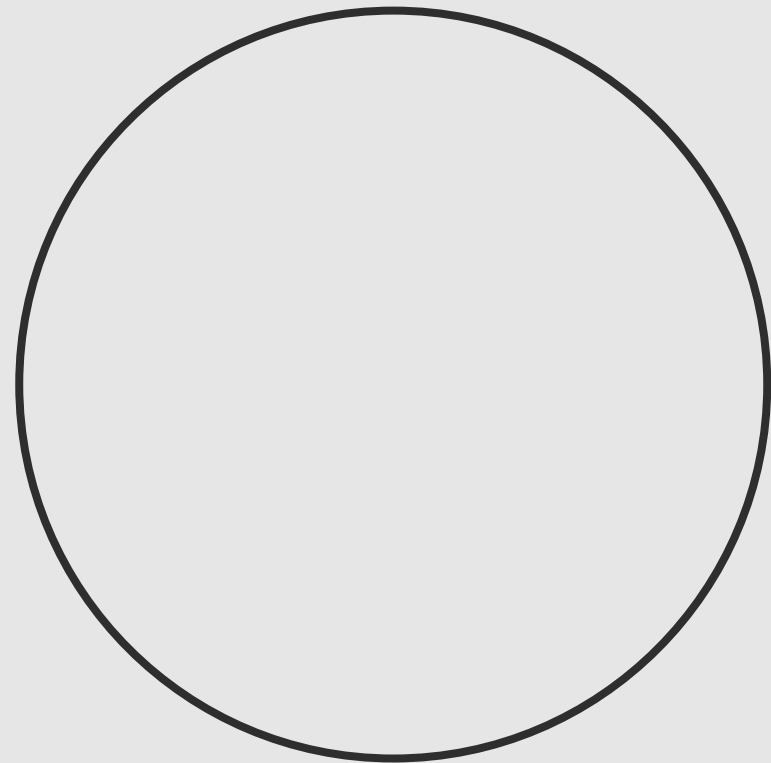
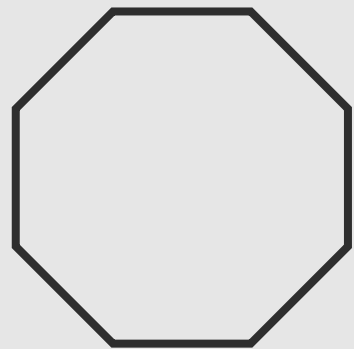
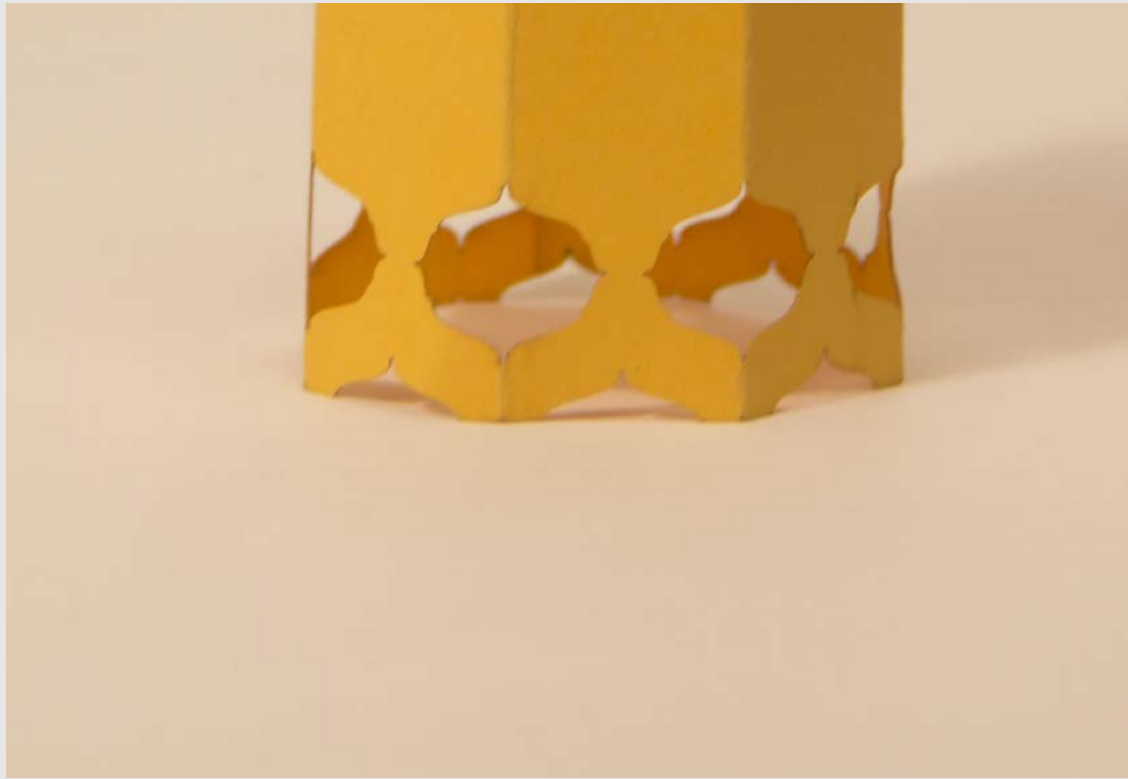




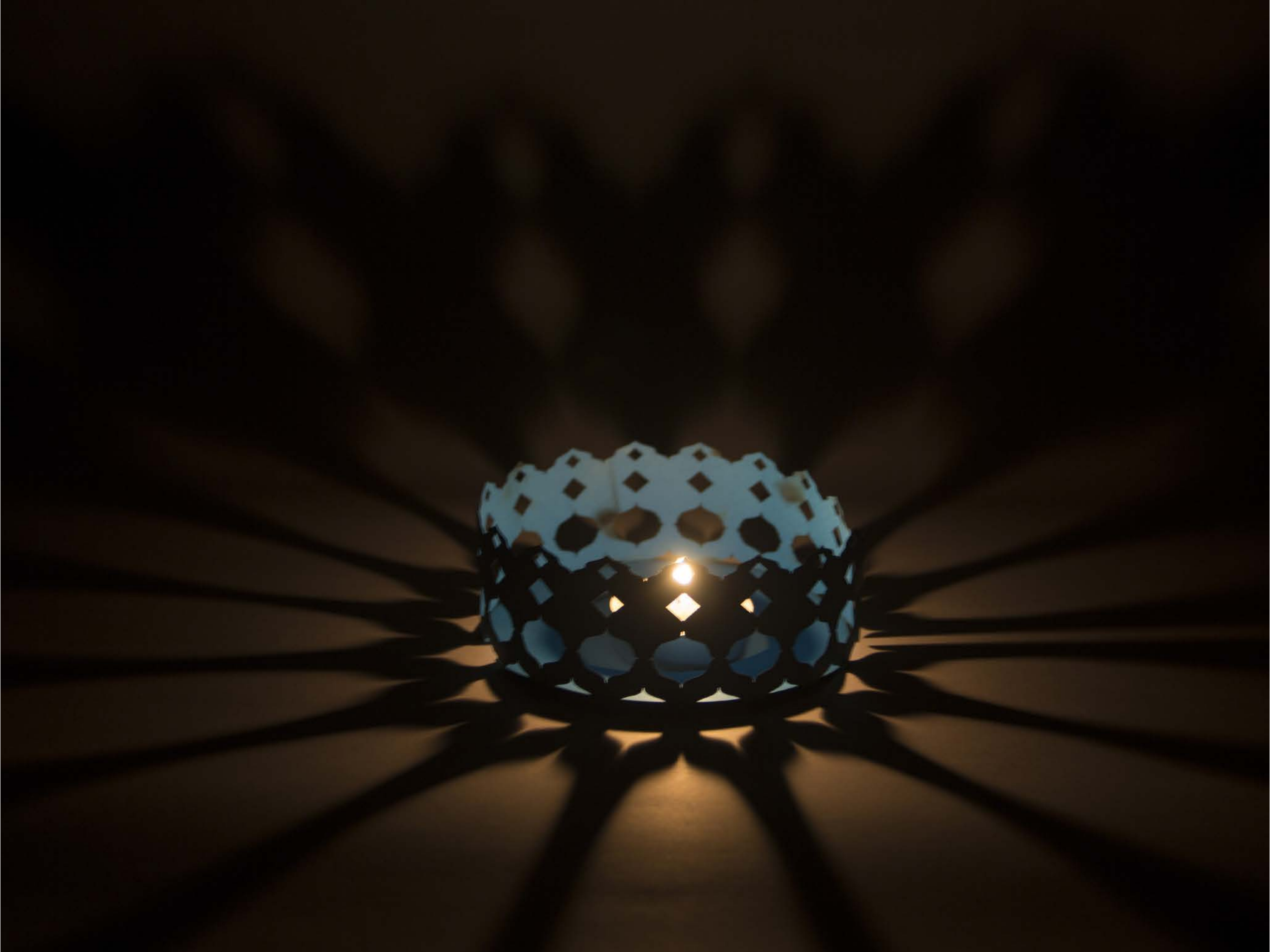






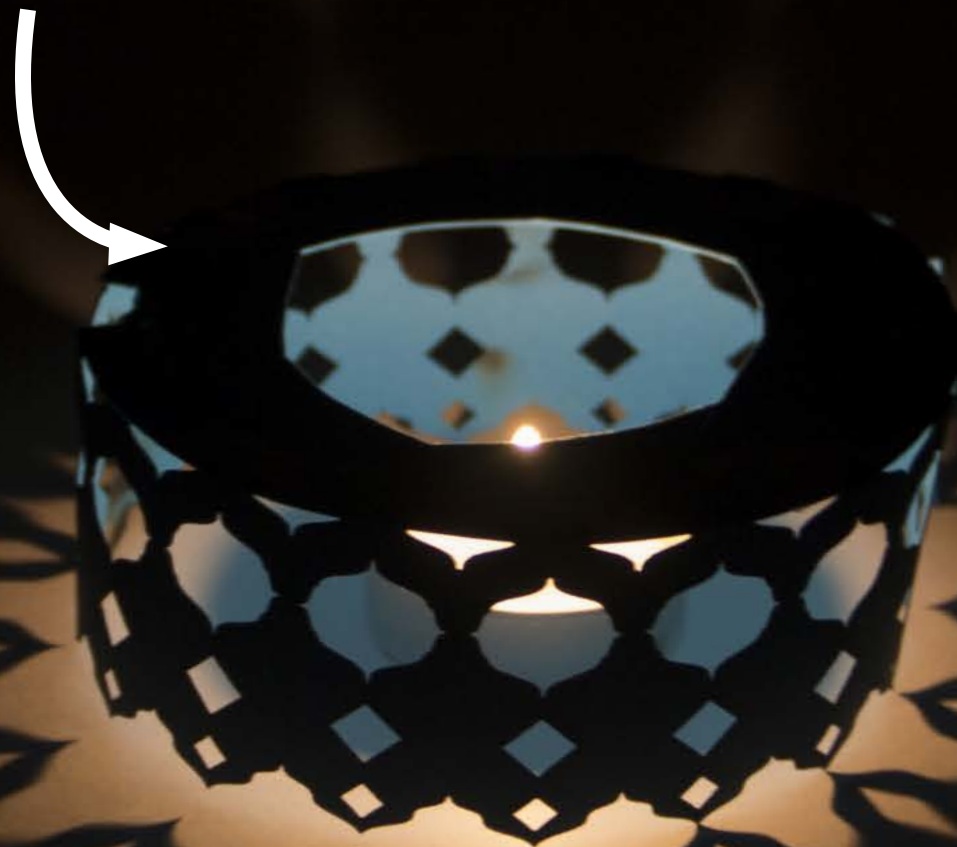








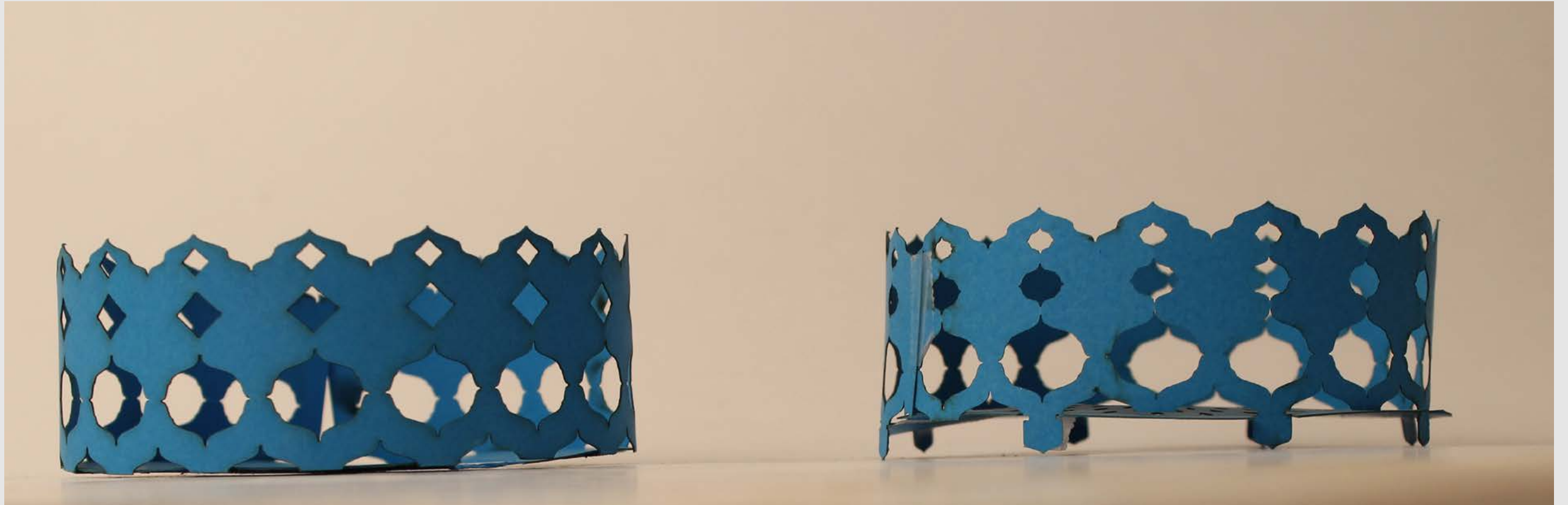
Block the light

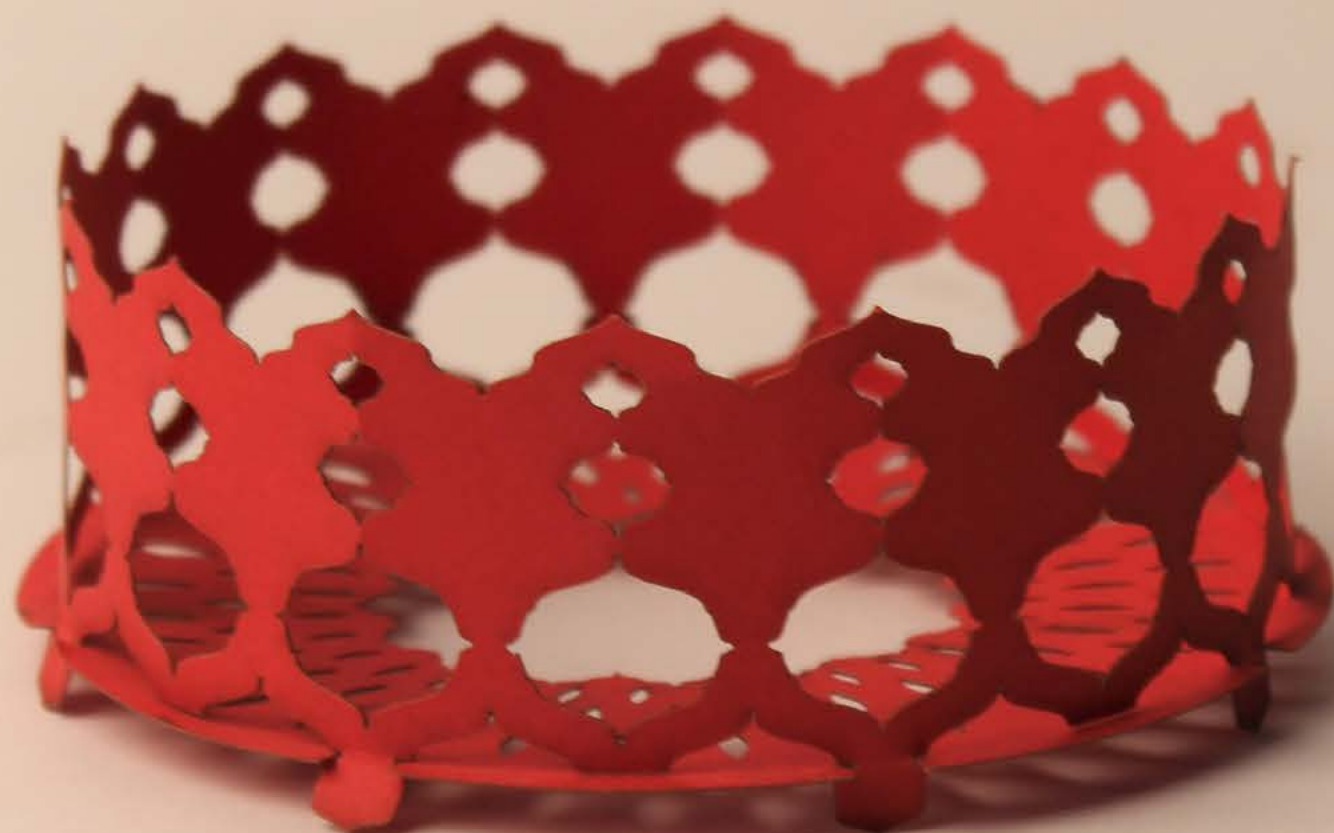


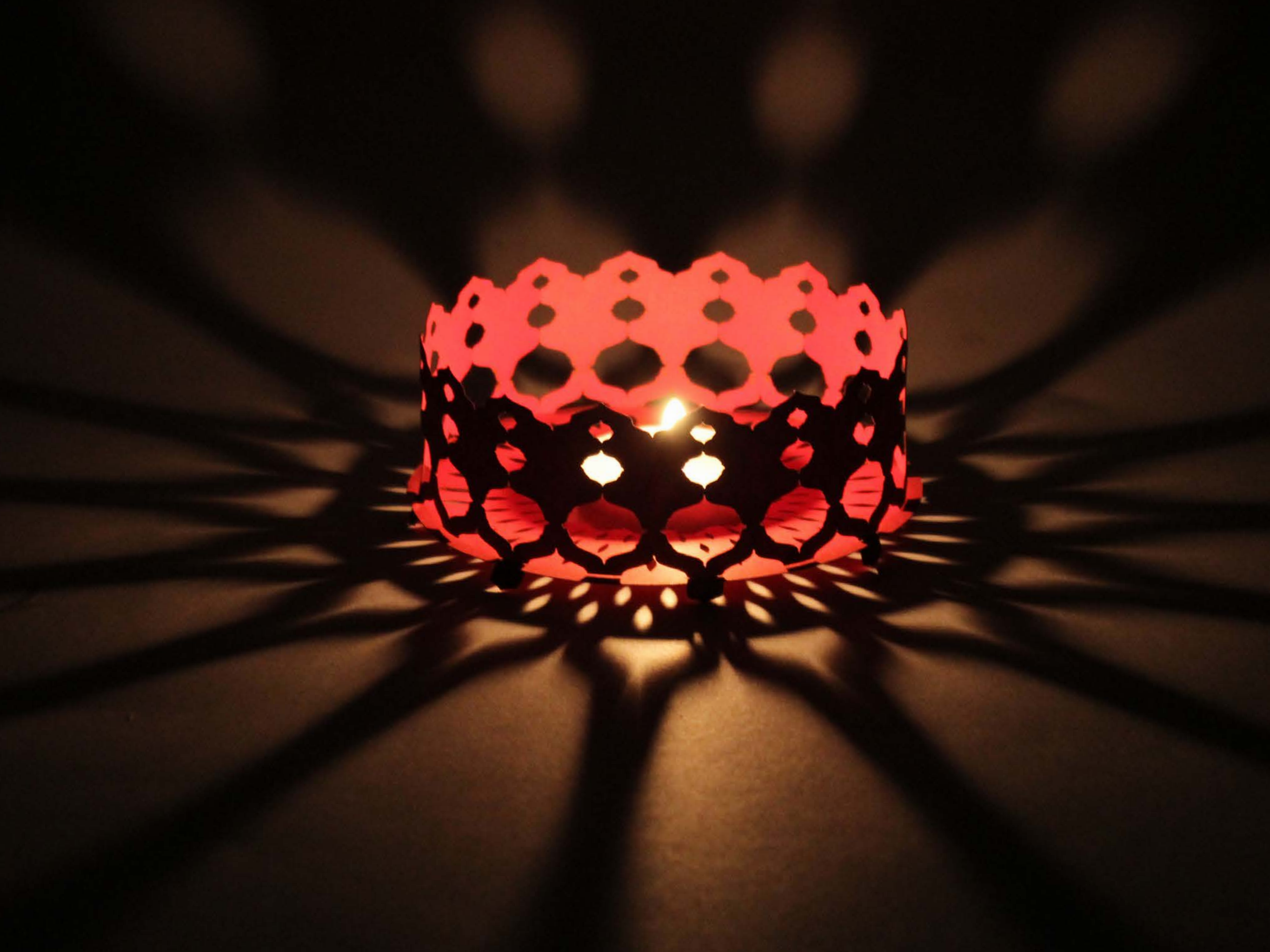




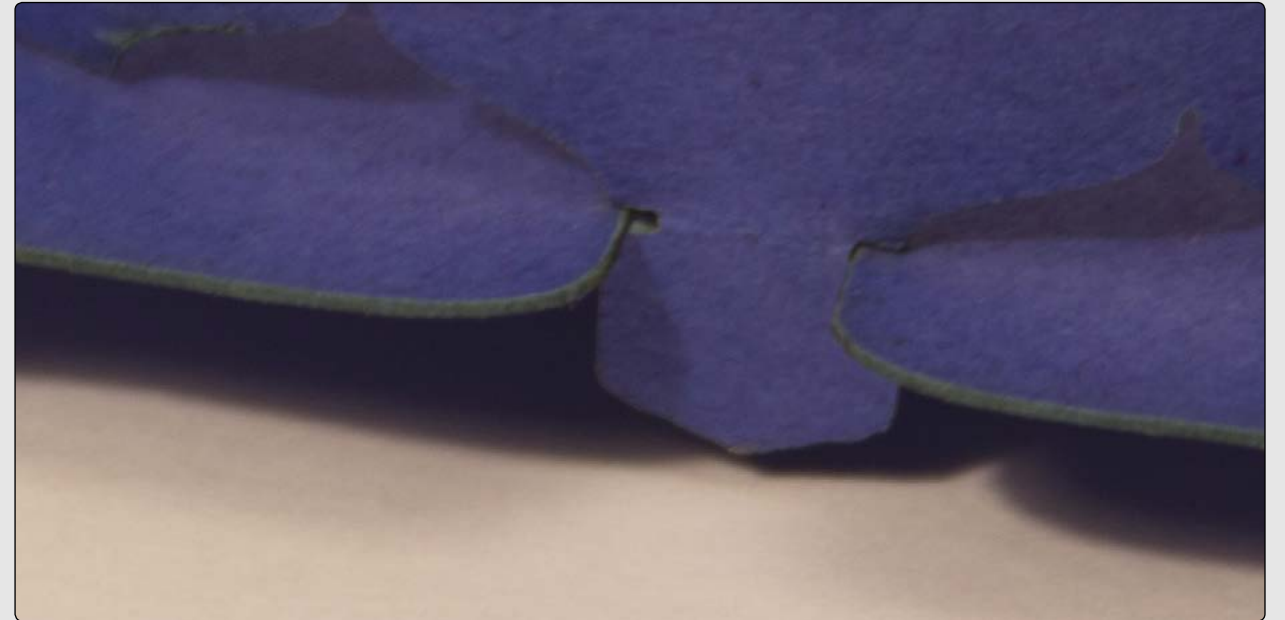


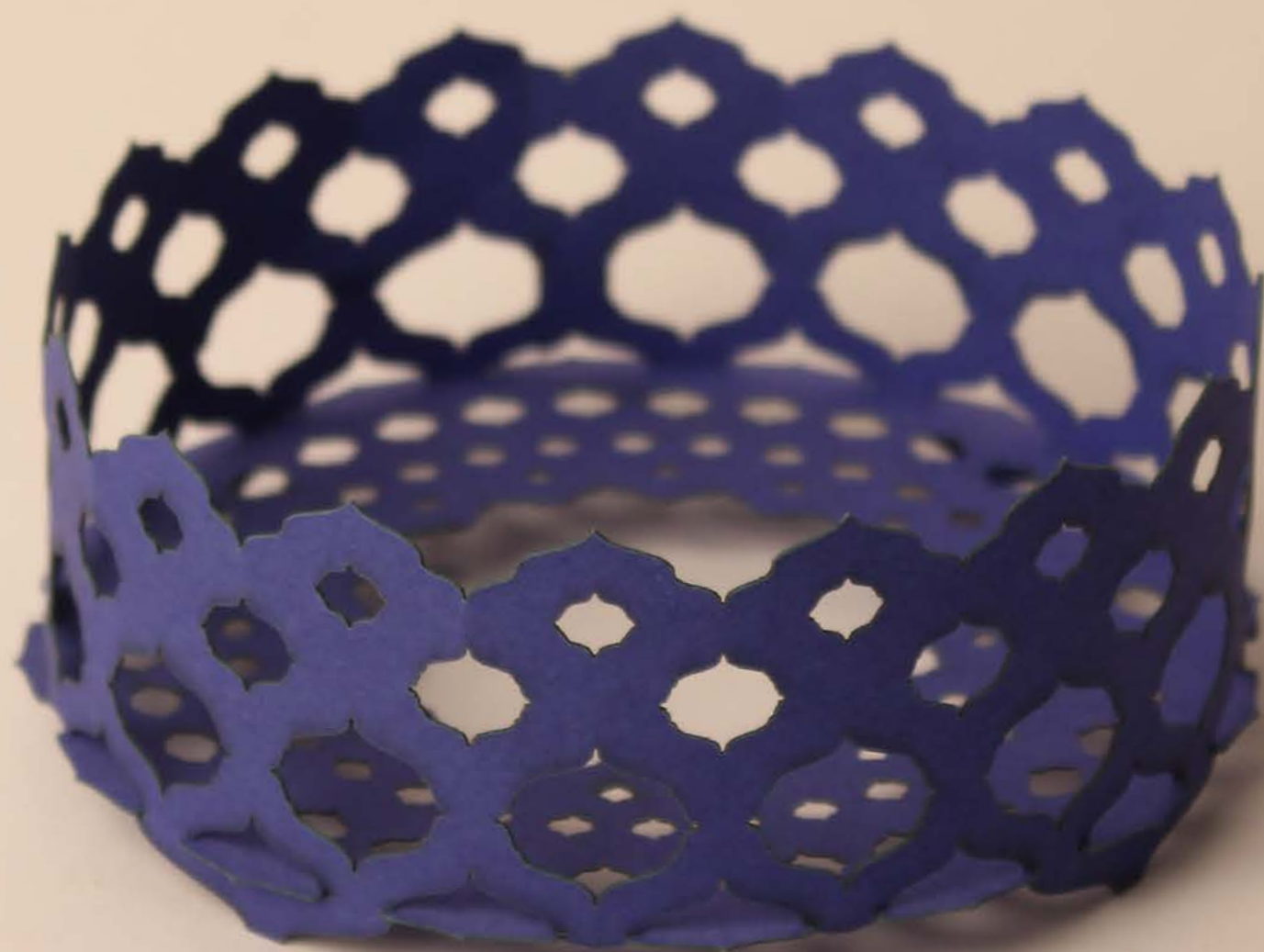


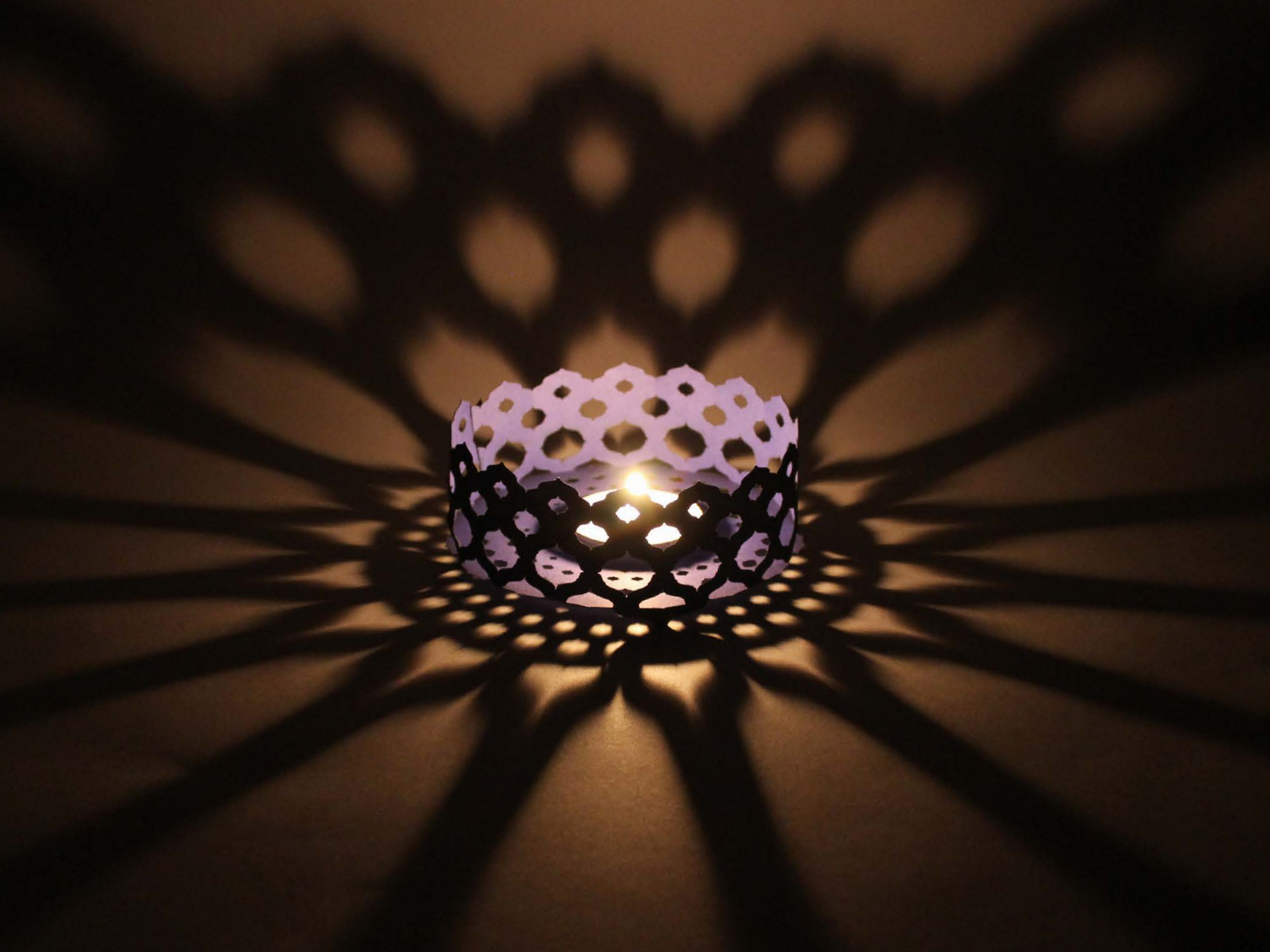


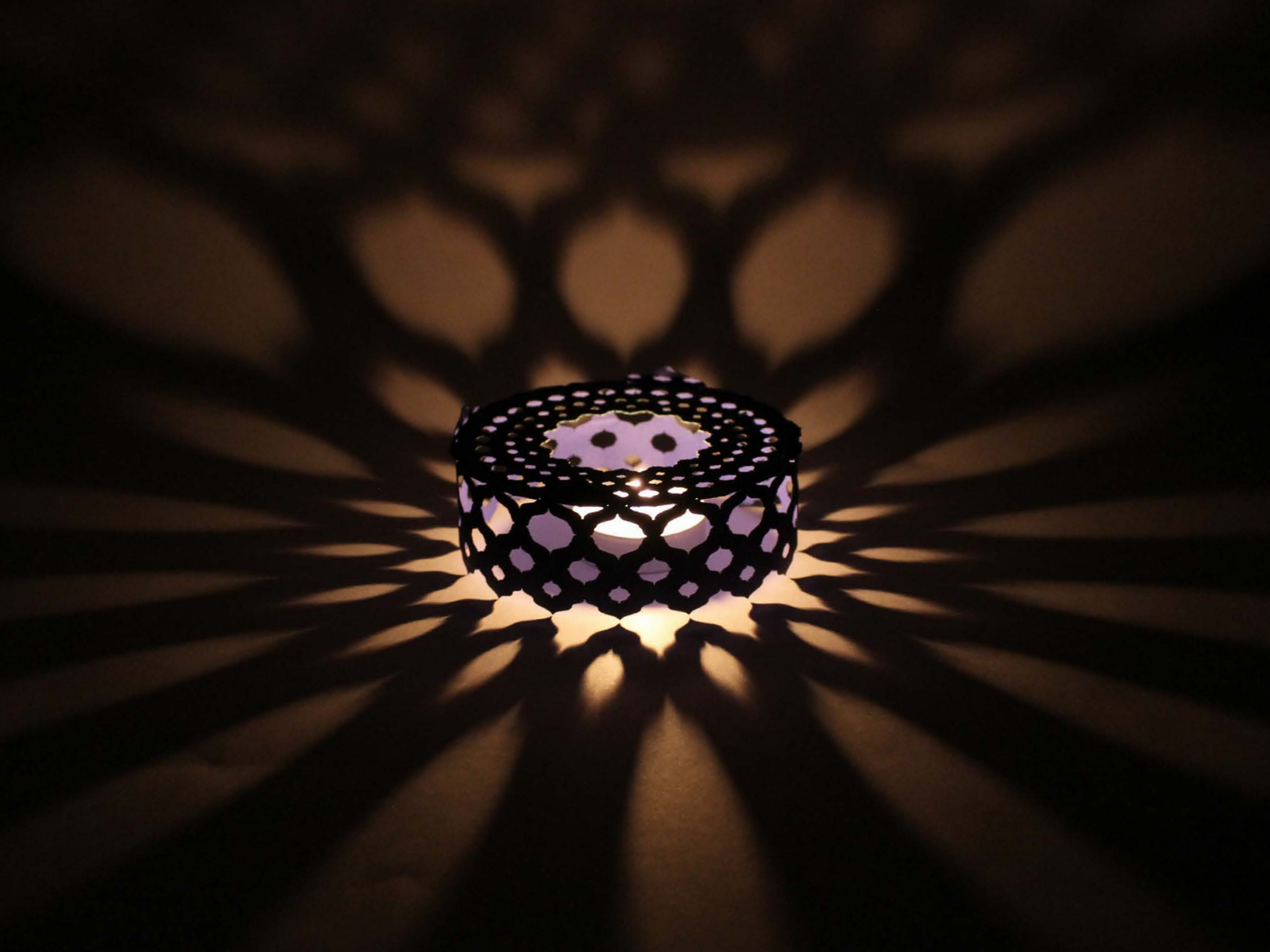


Improved joineries











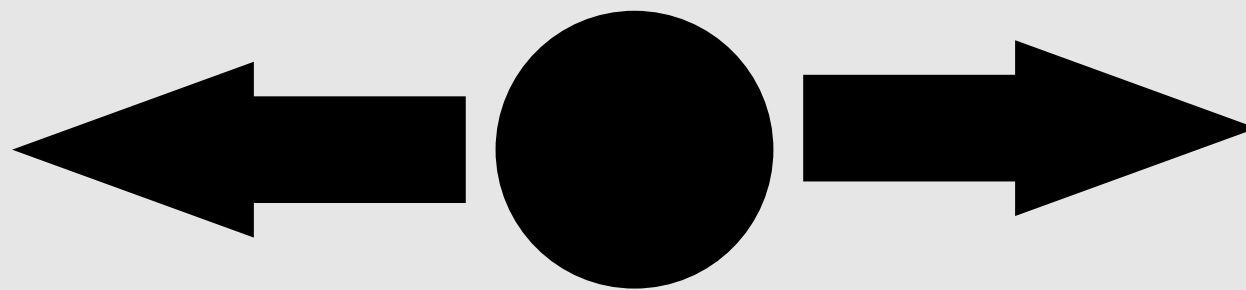
E 1/ Observation and Insight

Releasing or blocking of light defines the visual output of light-shadow pattern.

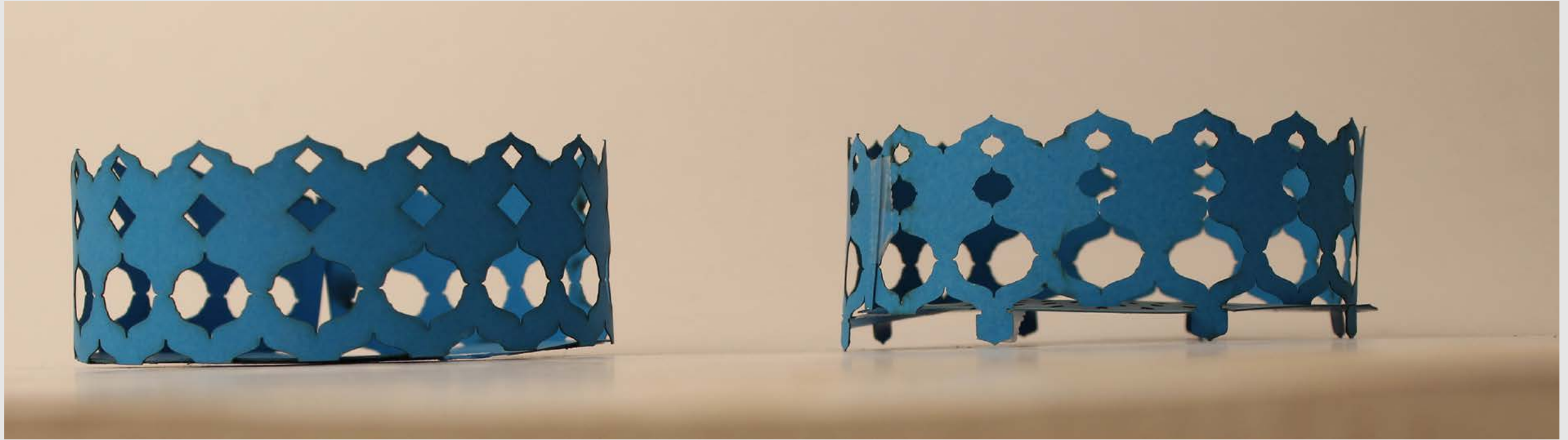
Exploration 2

Exploration 2

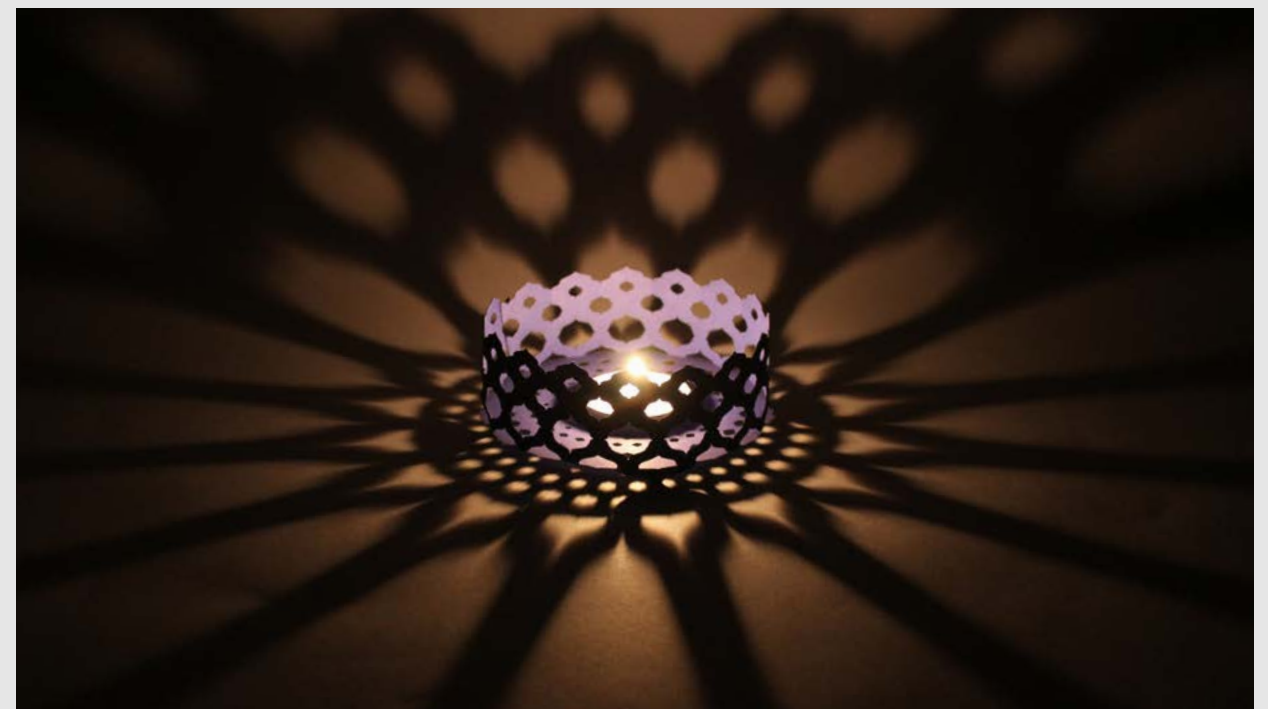
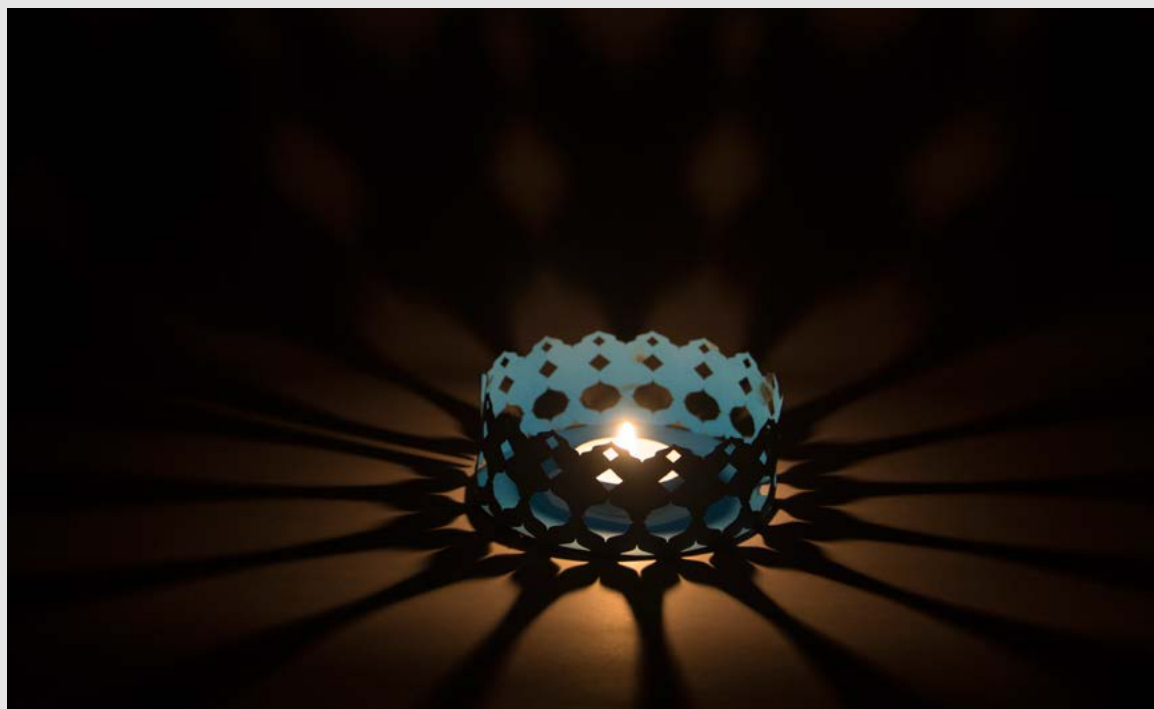
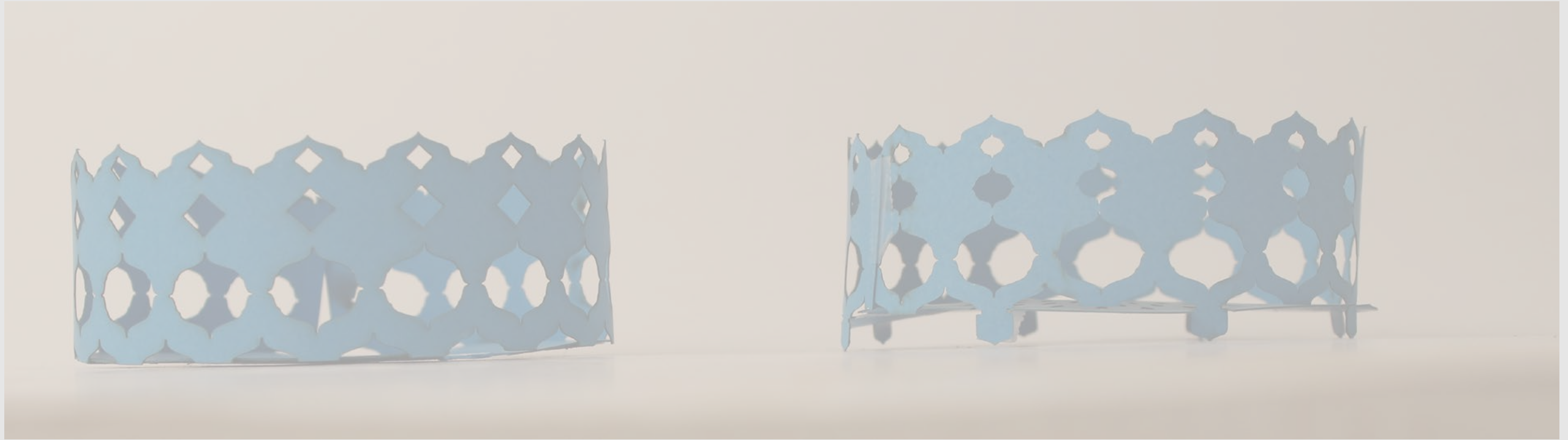
Wide



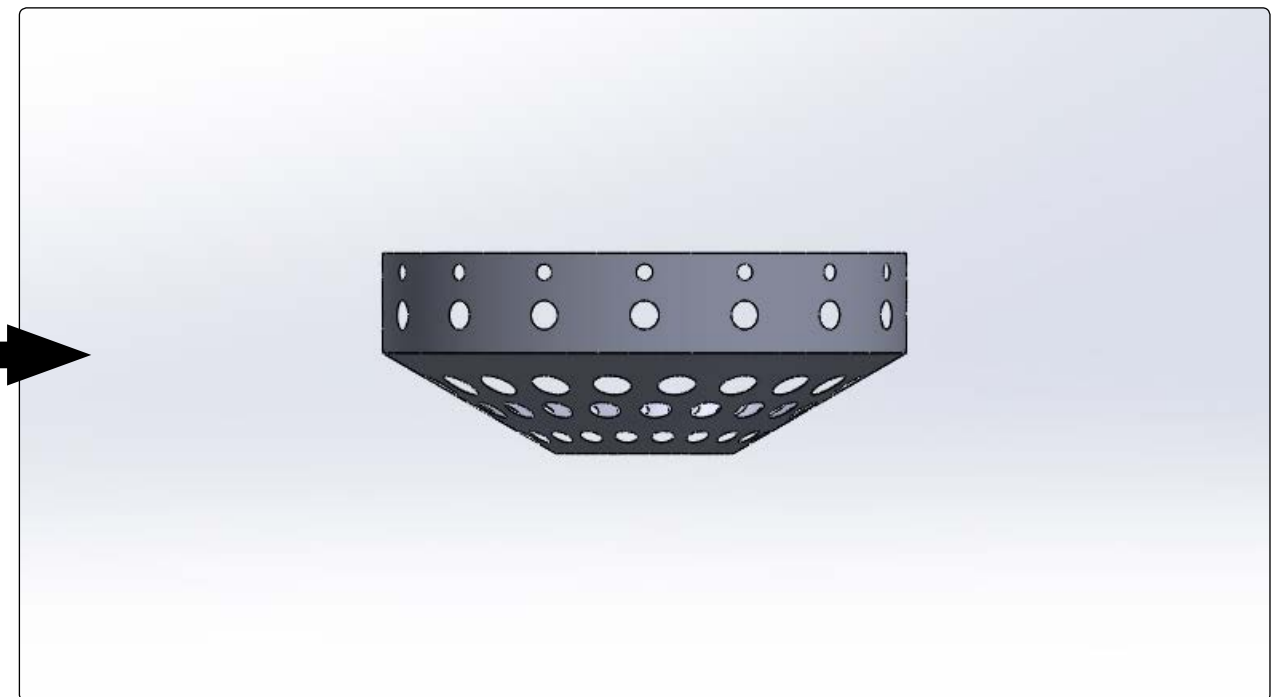
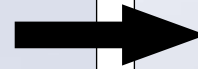
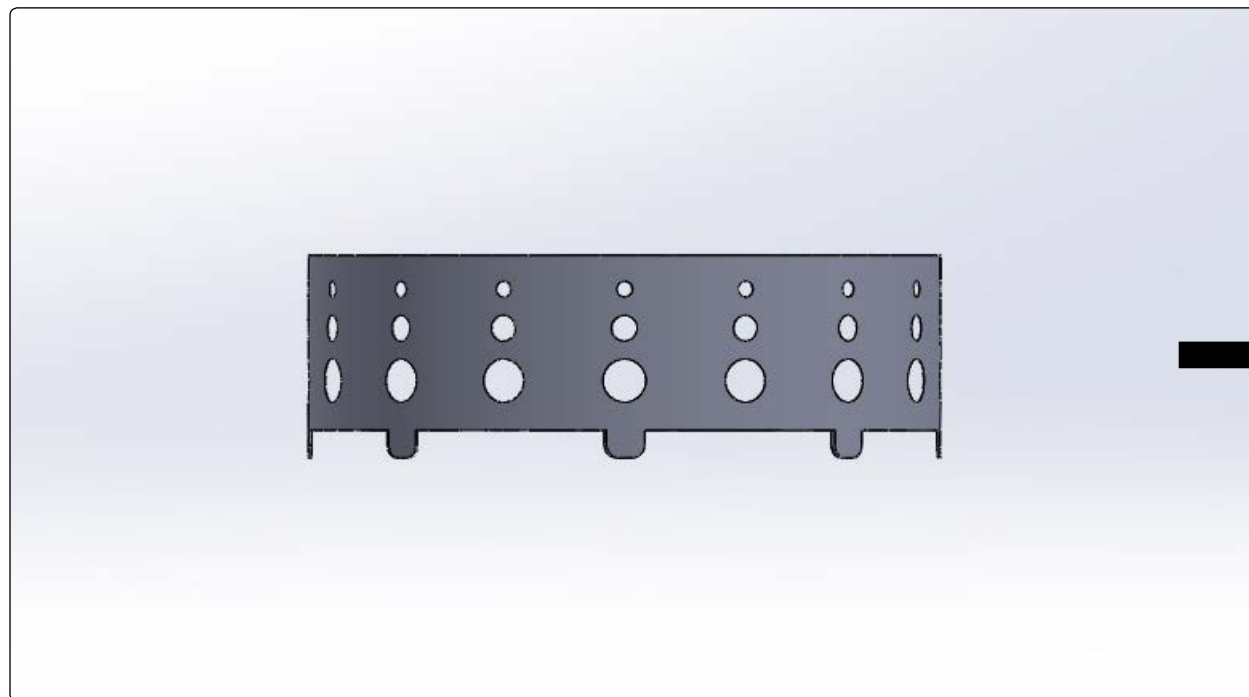
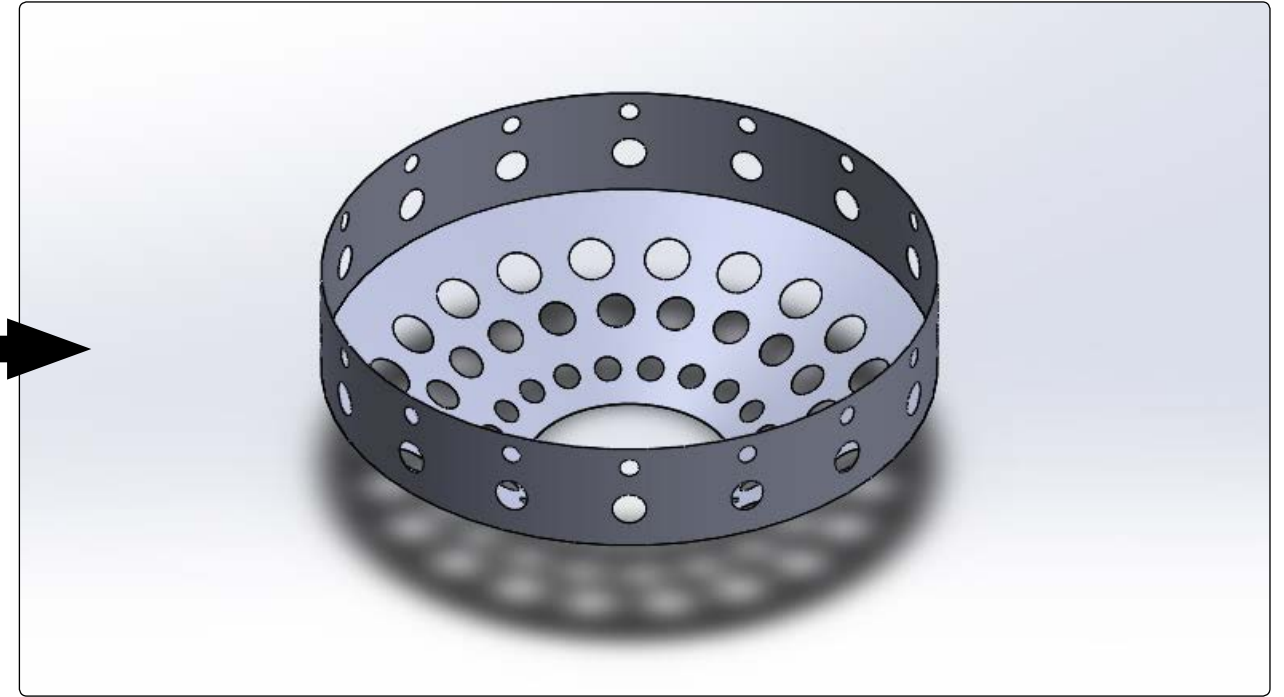
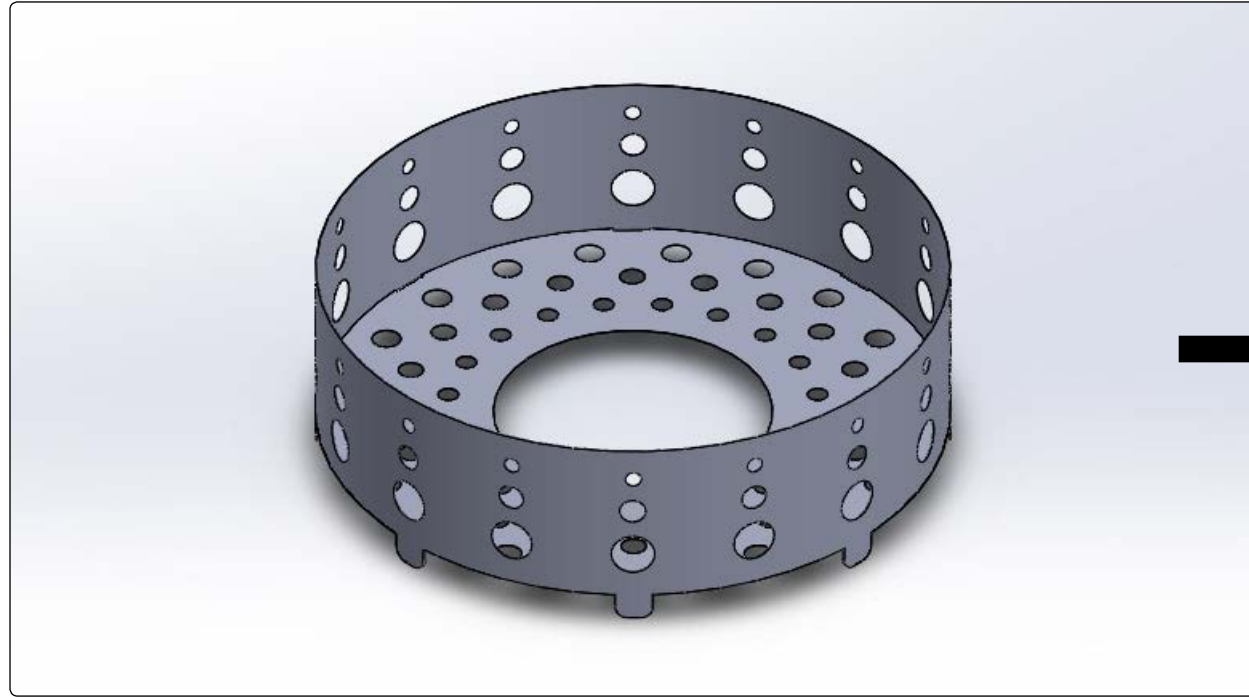
£ 2.1



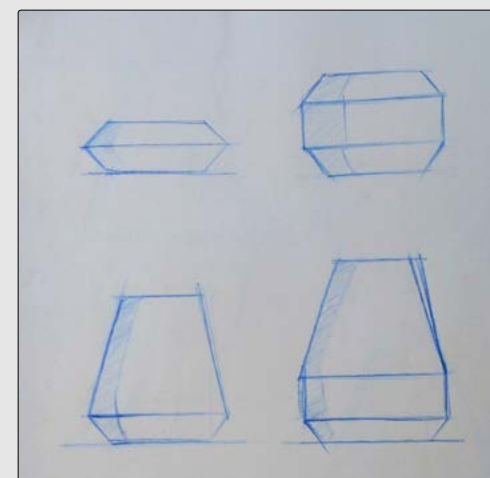
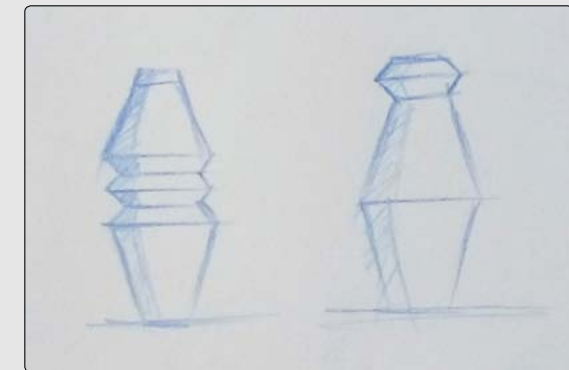
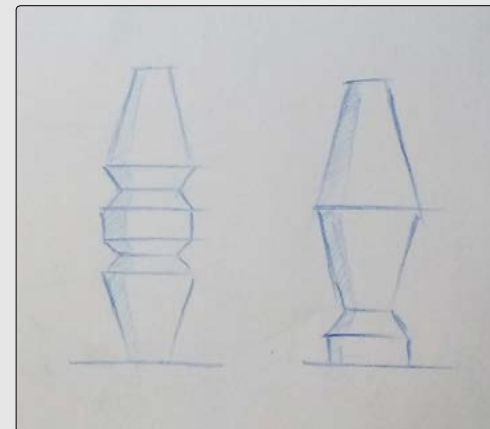
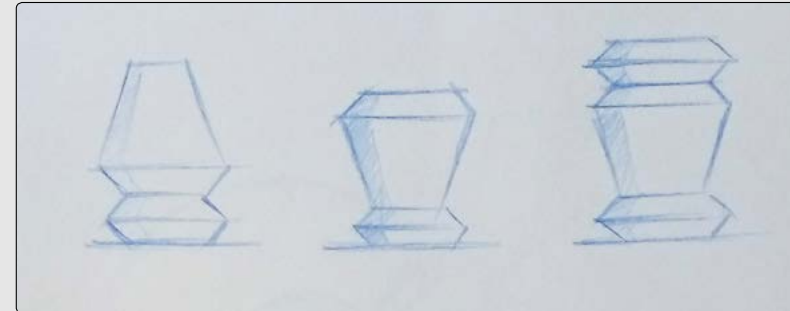
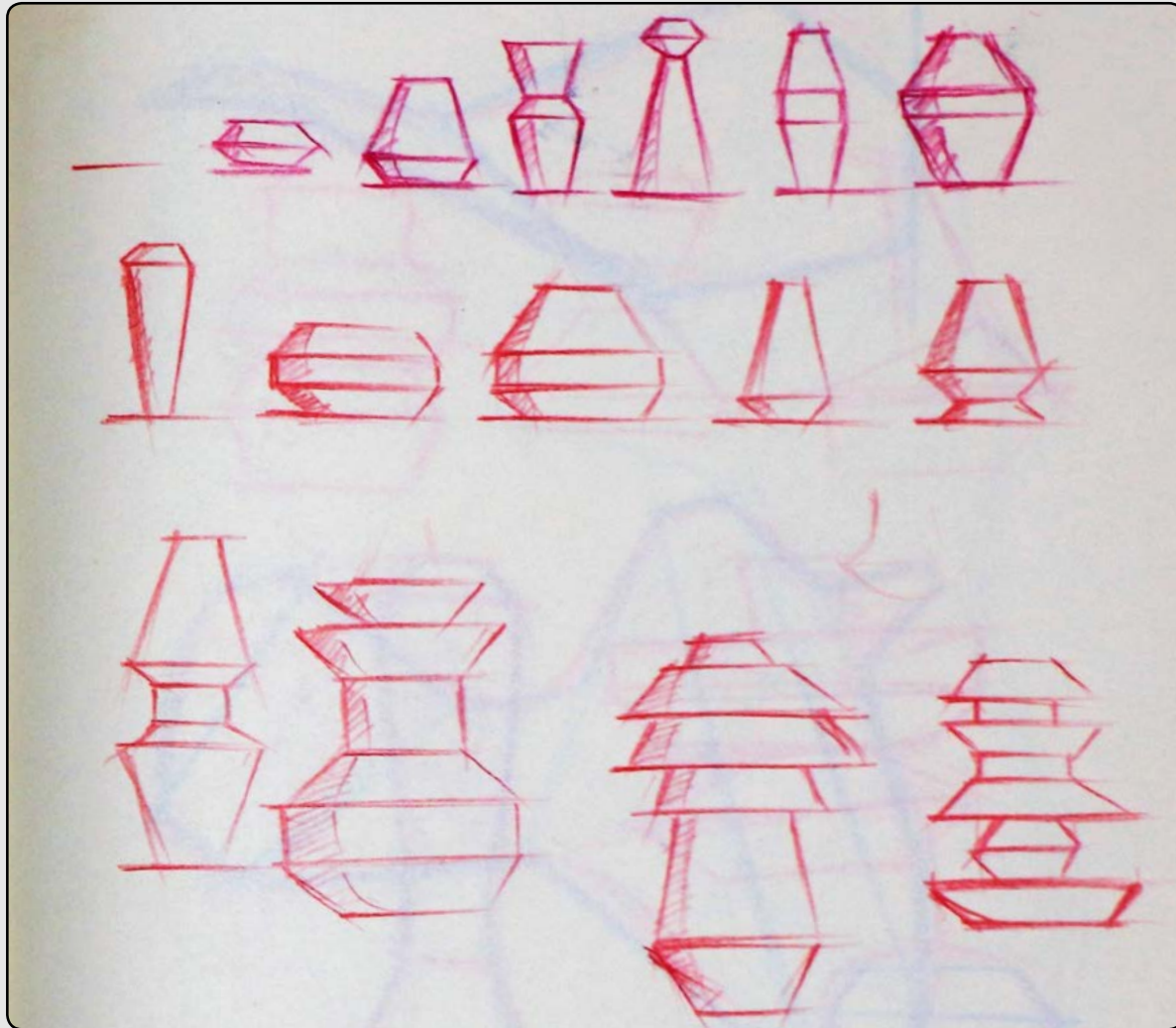
£ 2.1



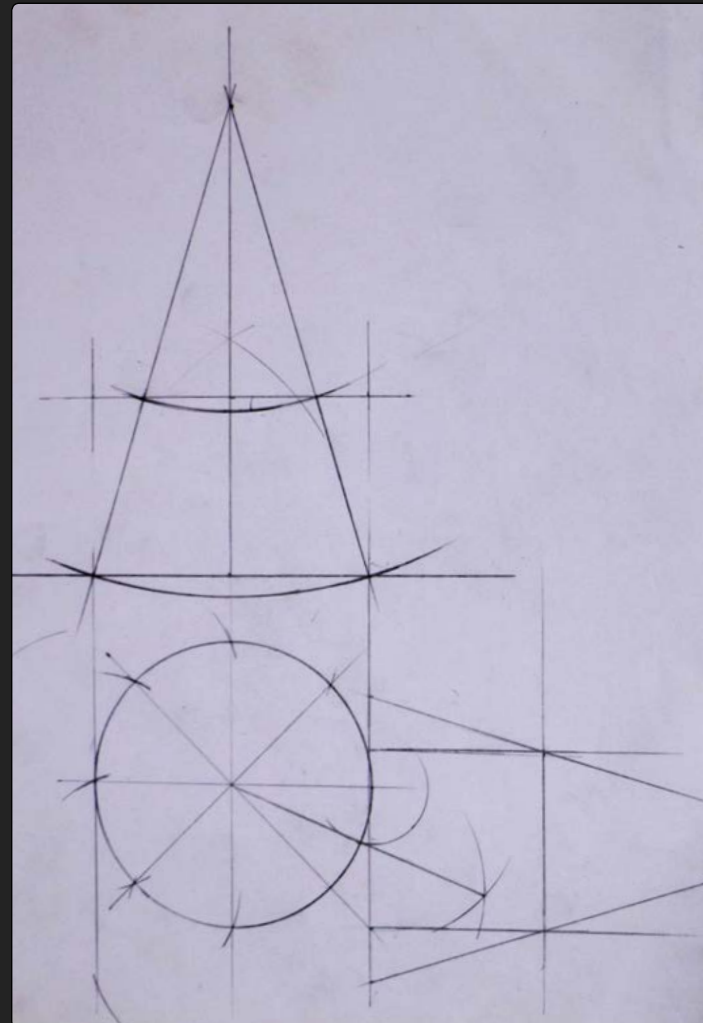
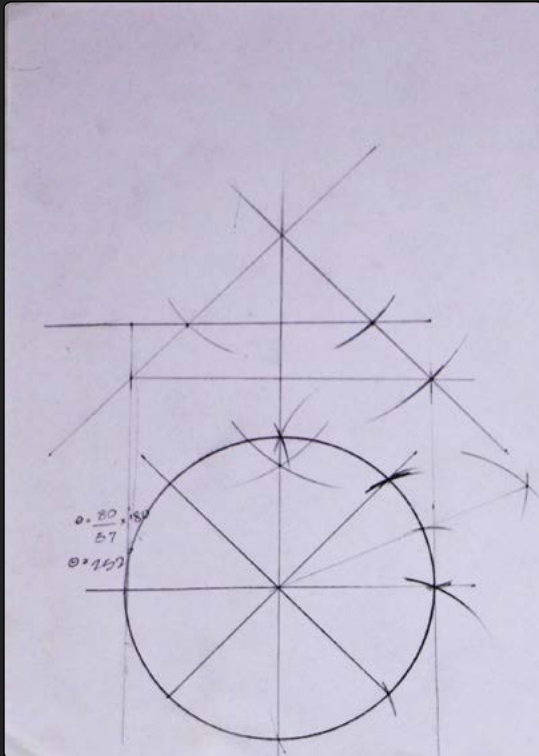
§ 2.1



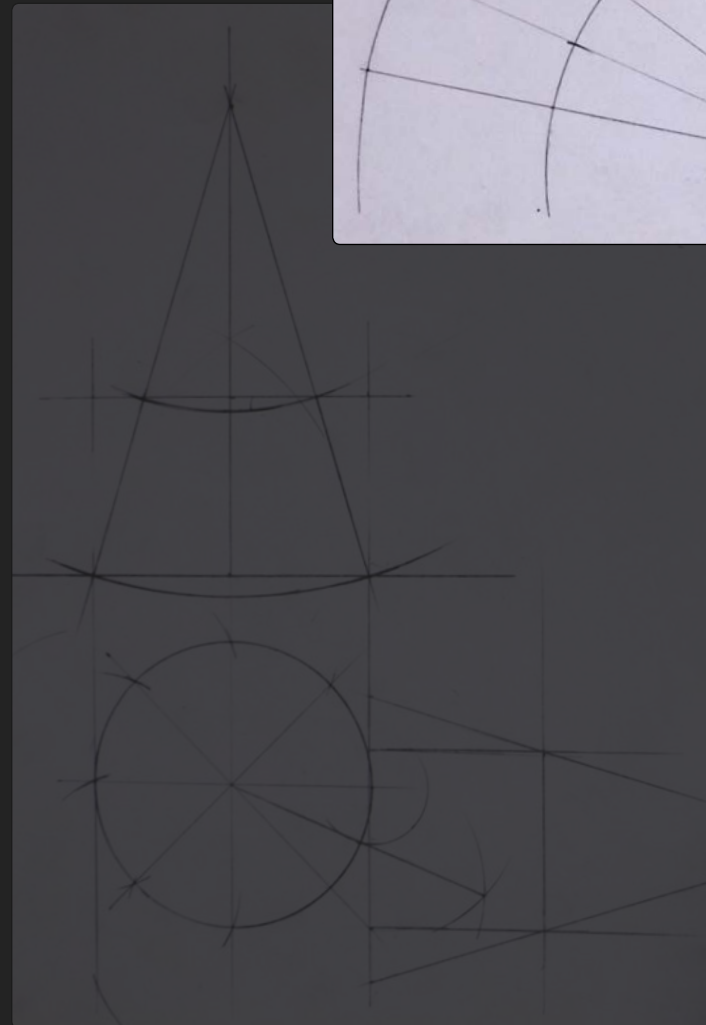
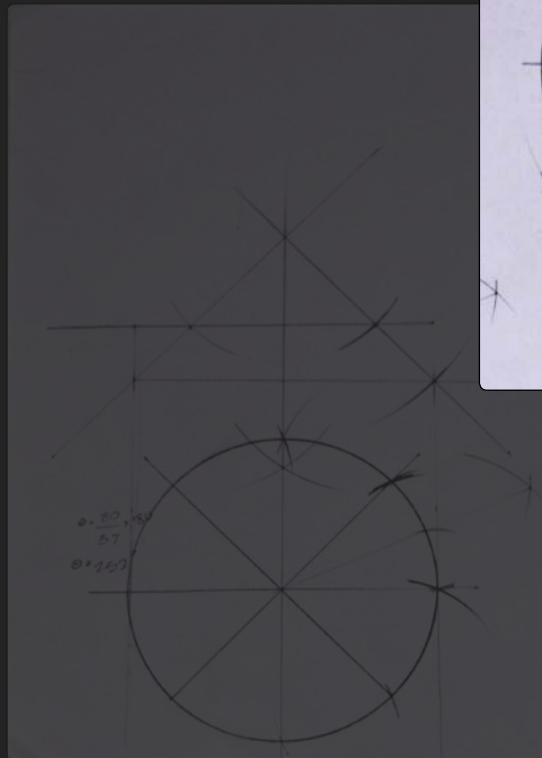
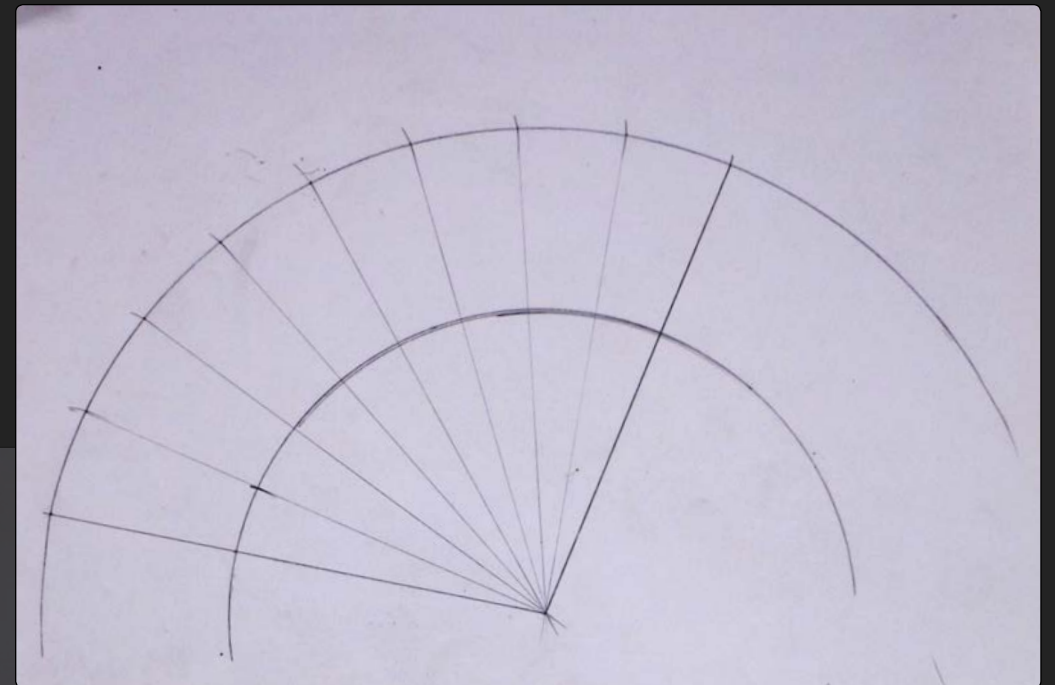
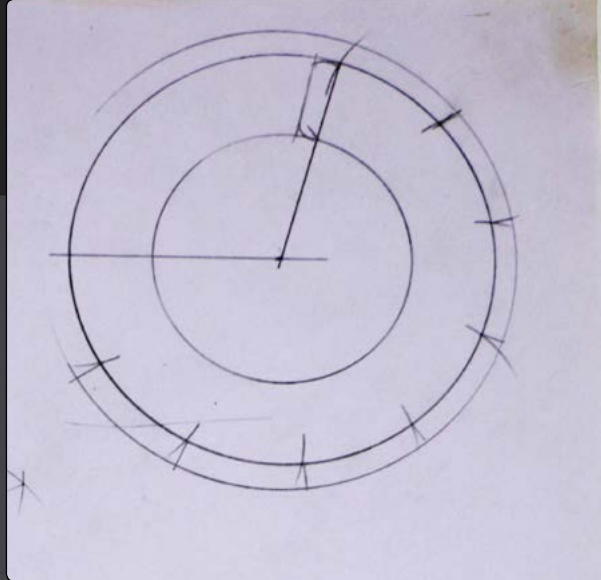
£ 2.1/ Ideating forms



Ex 2.1/ Development

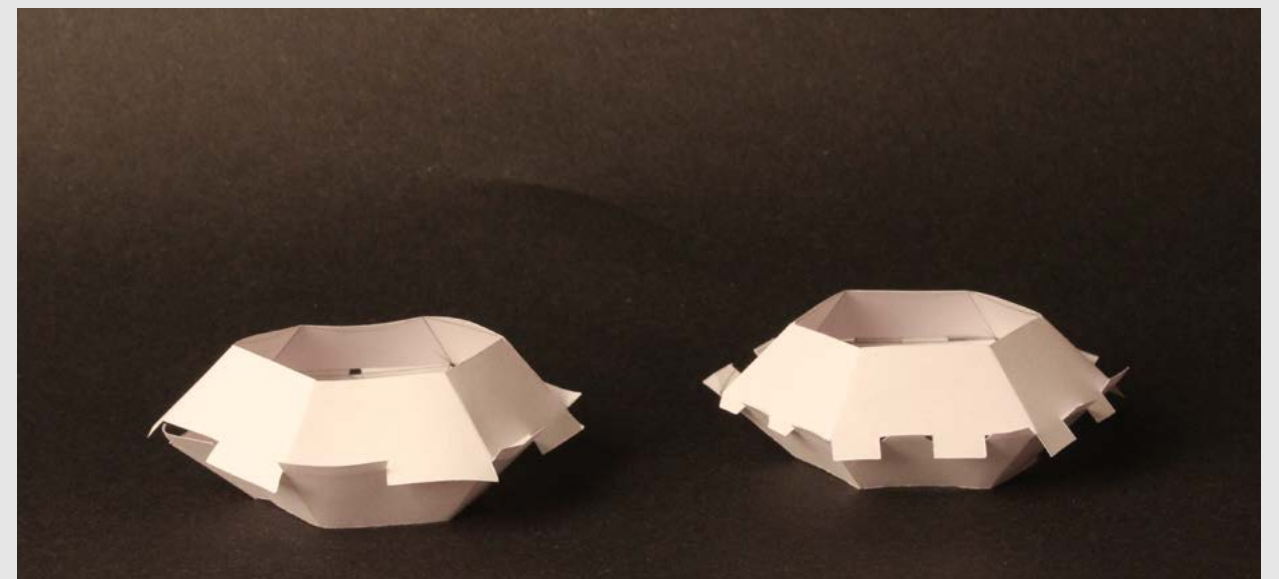
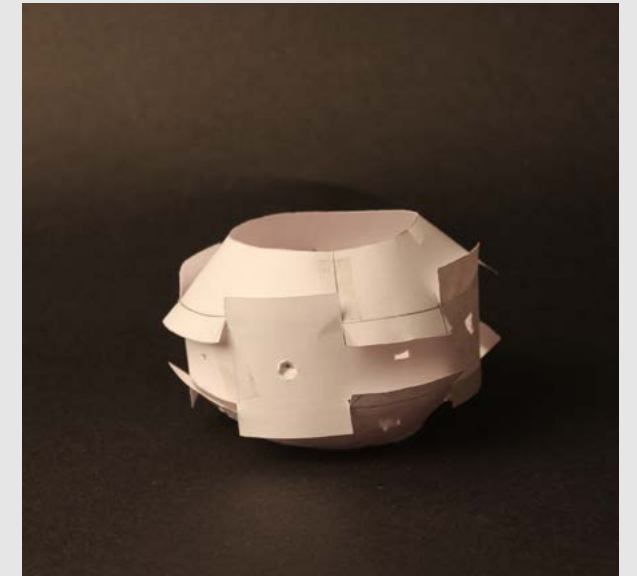
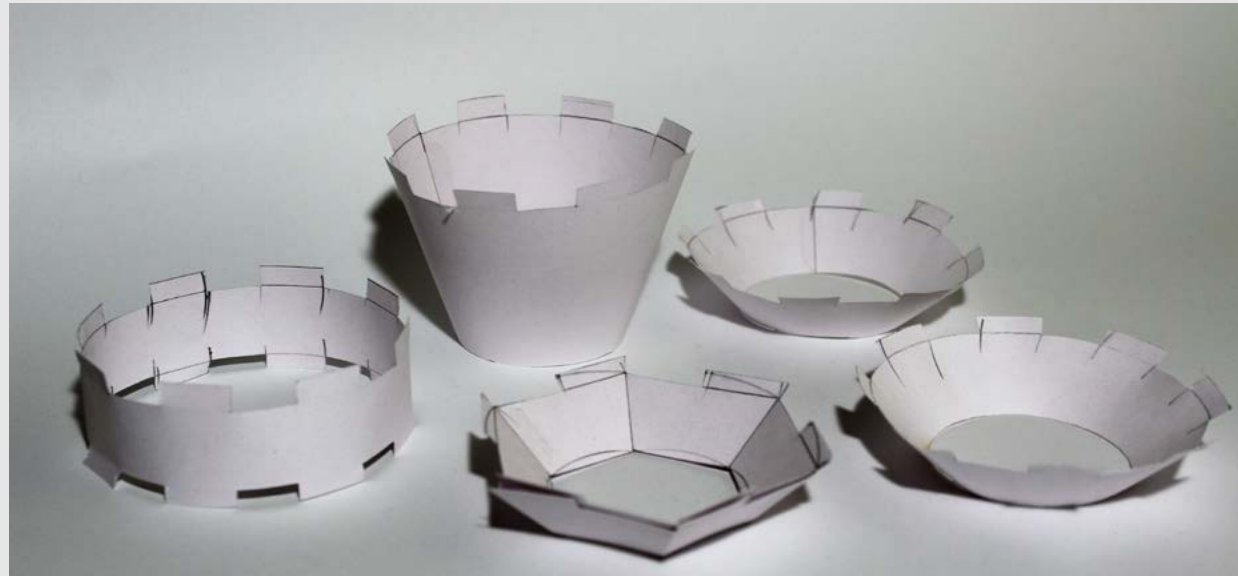


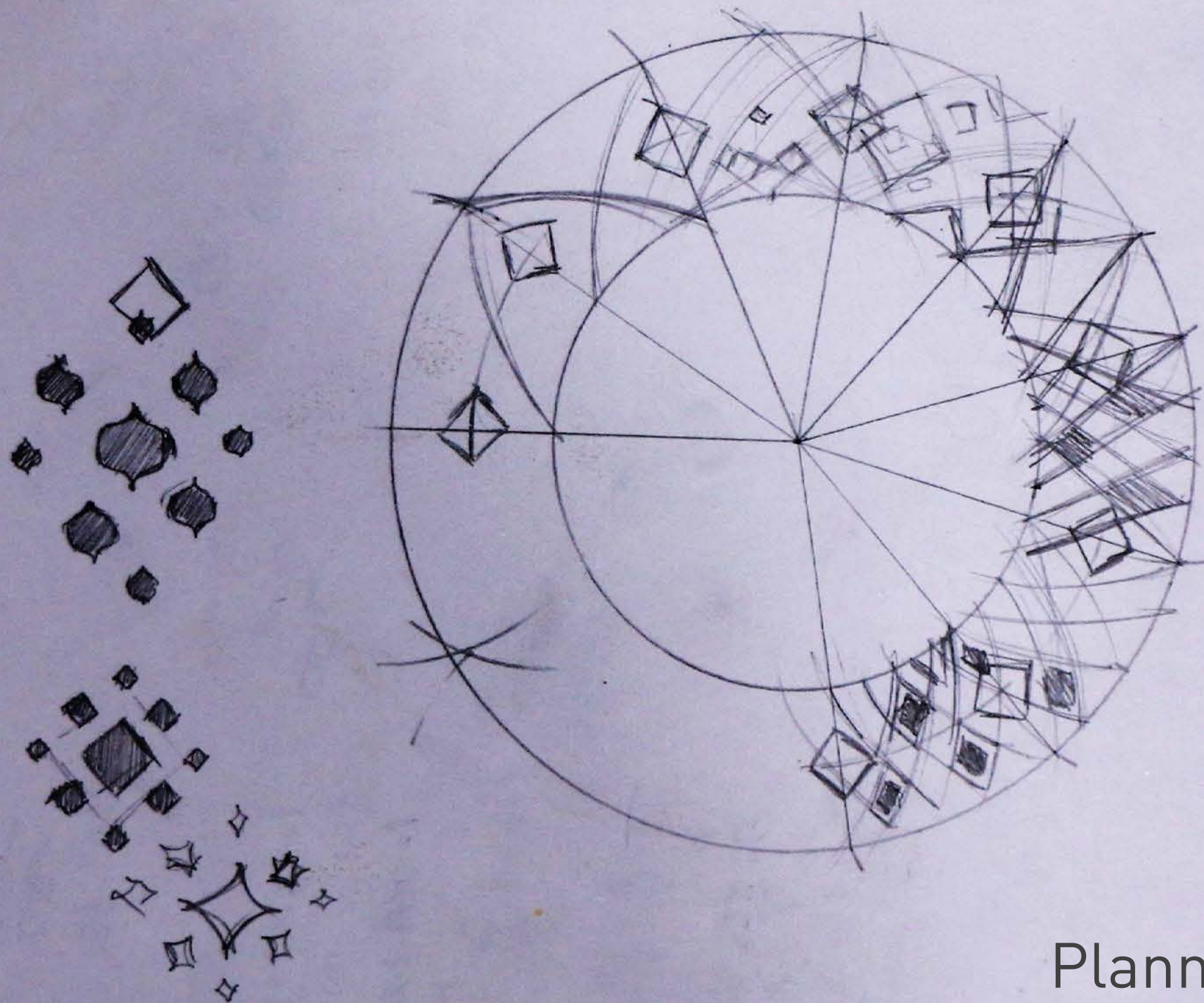
£ 2.1/ Development



£ 2.1/ Mock up

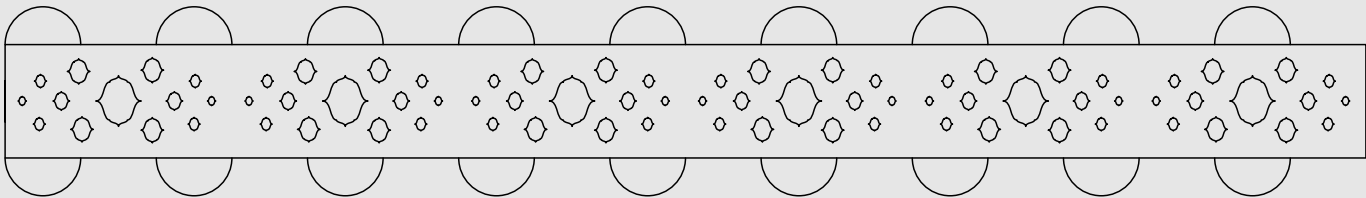
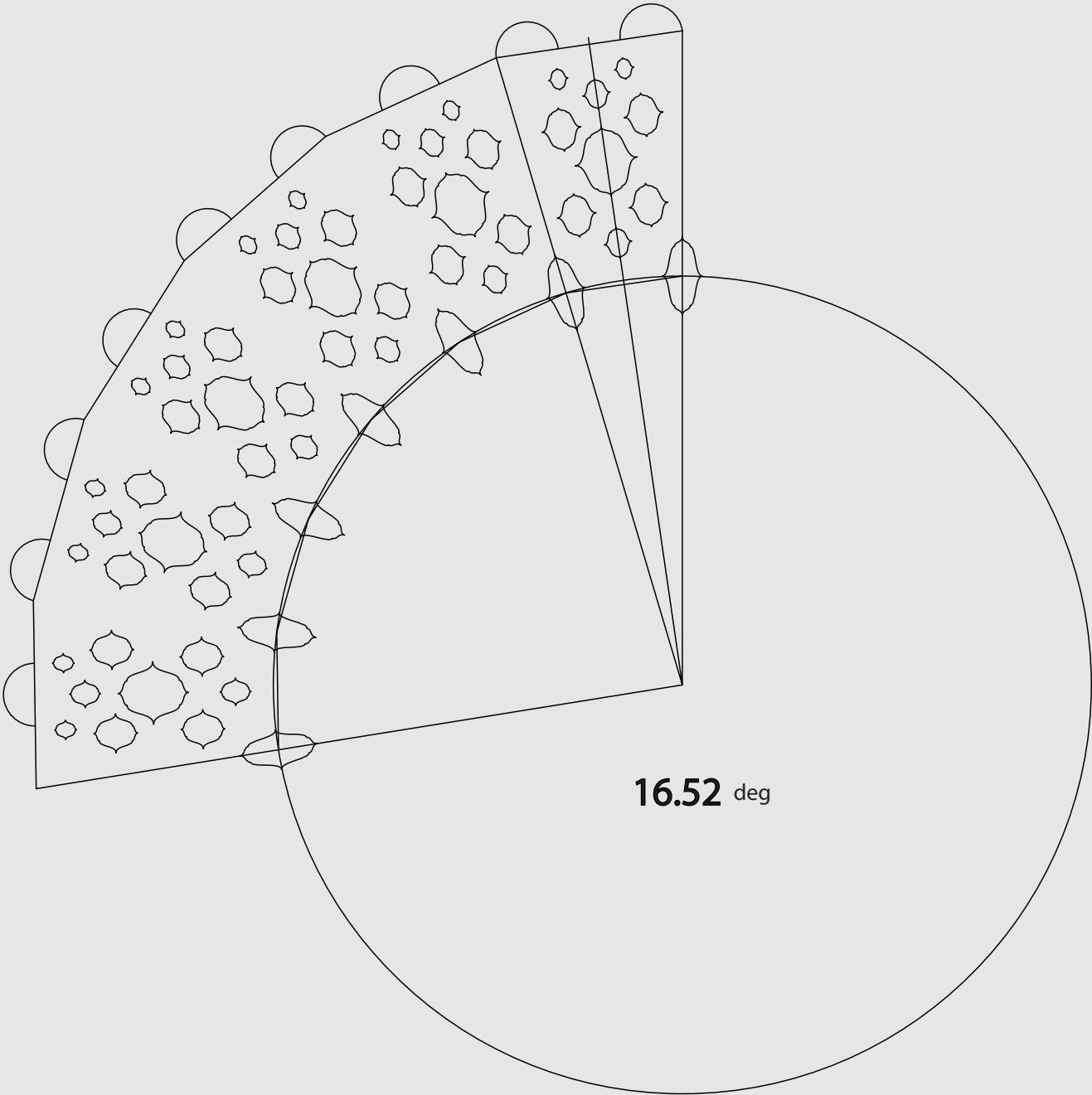
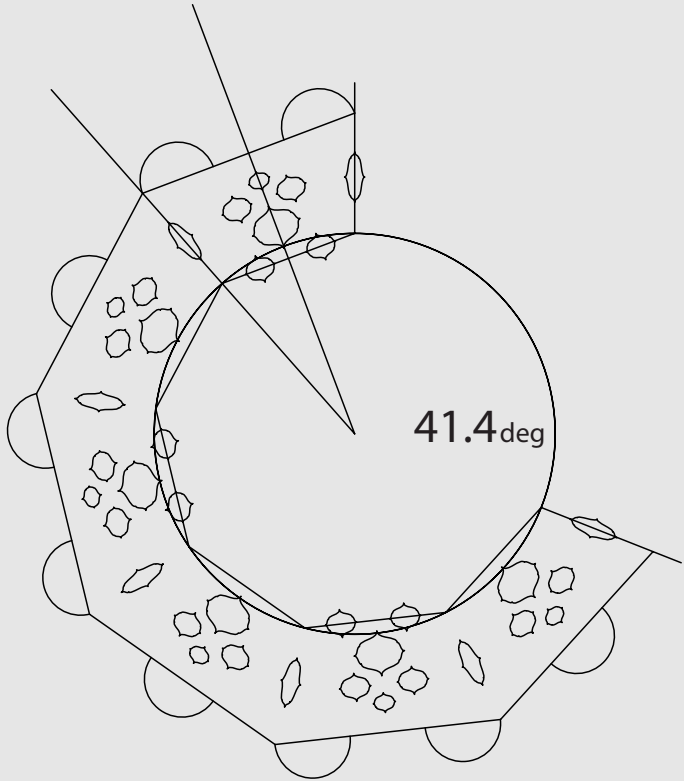
The frustums
fit together into
zig-zag slots.



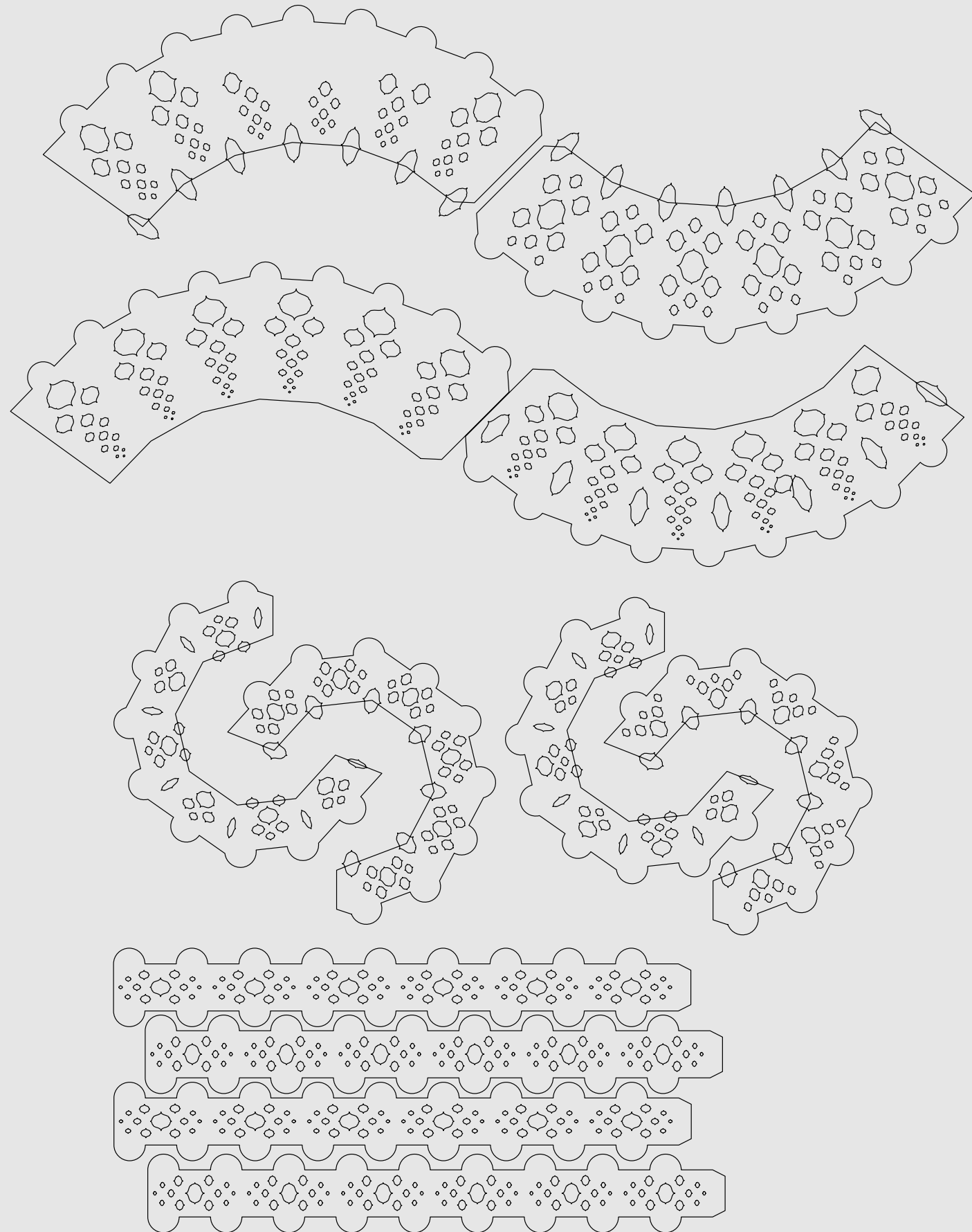


Planning in 2D

£ 2.1/ Digitalisation



£ 2.1/ Ready to cut



Ε 2.1/ Laser Cutting



£ 2.1/ Units after pasting



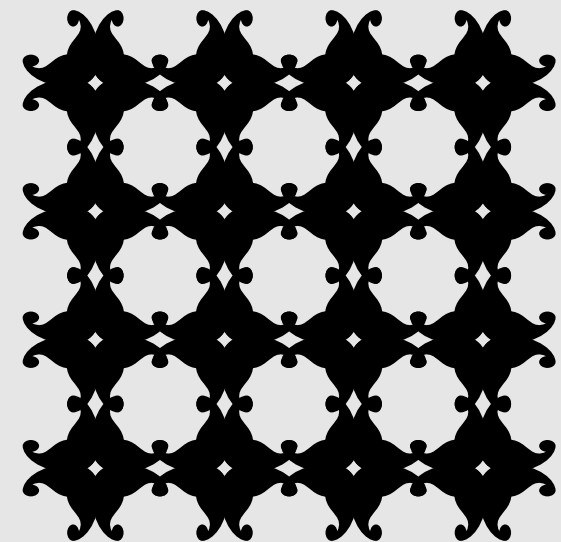
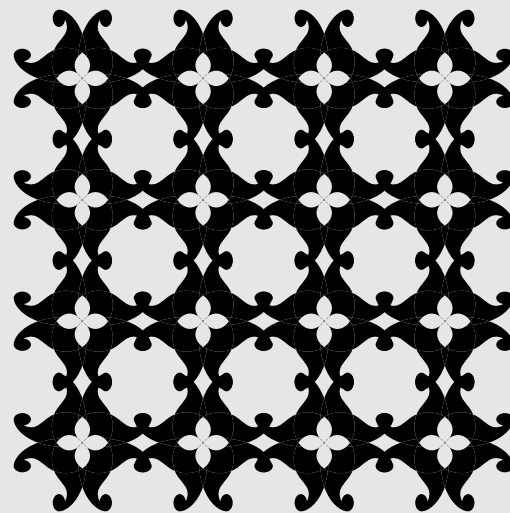
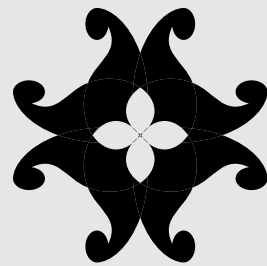
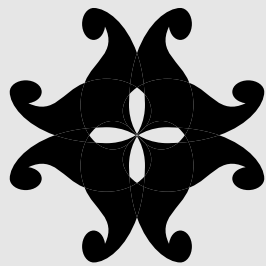
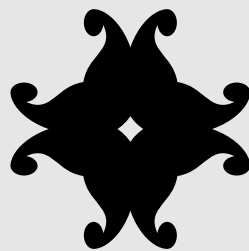
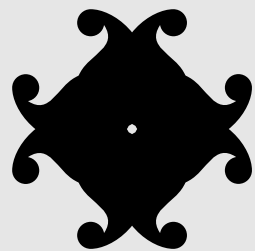
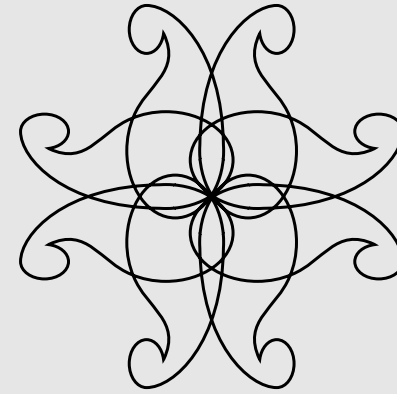
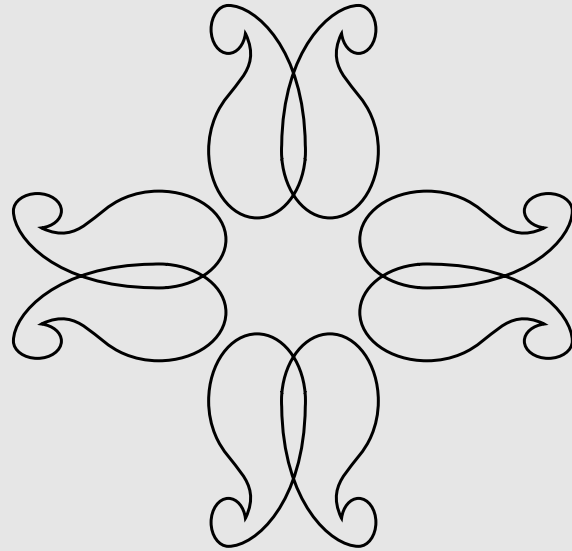
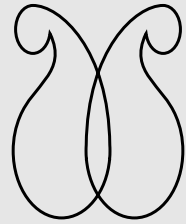
Ε 2.1α



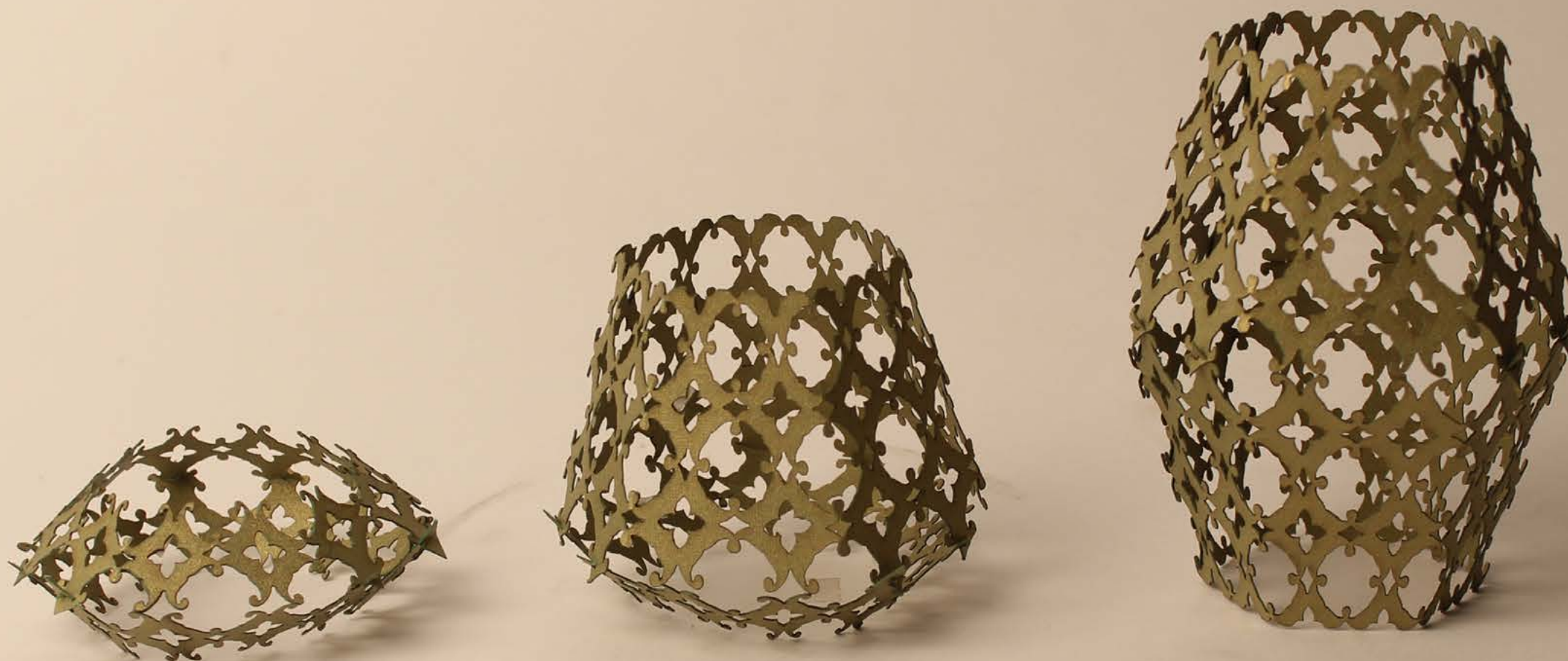
Ε 2.1α



§ 2.1b/ Motiv exploration



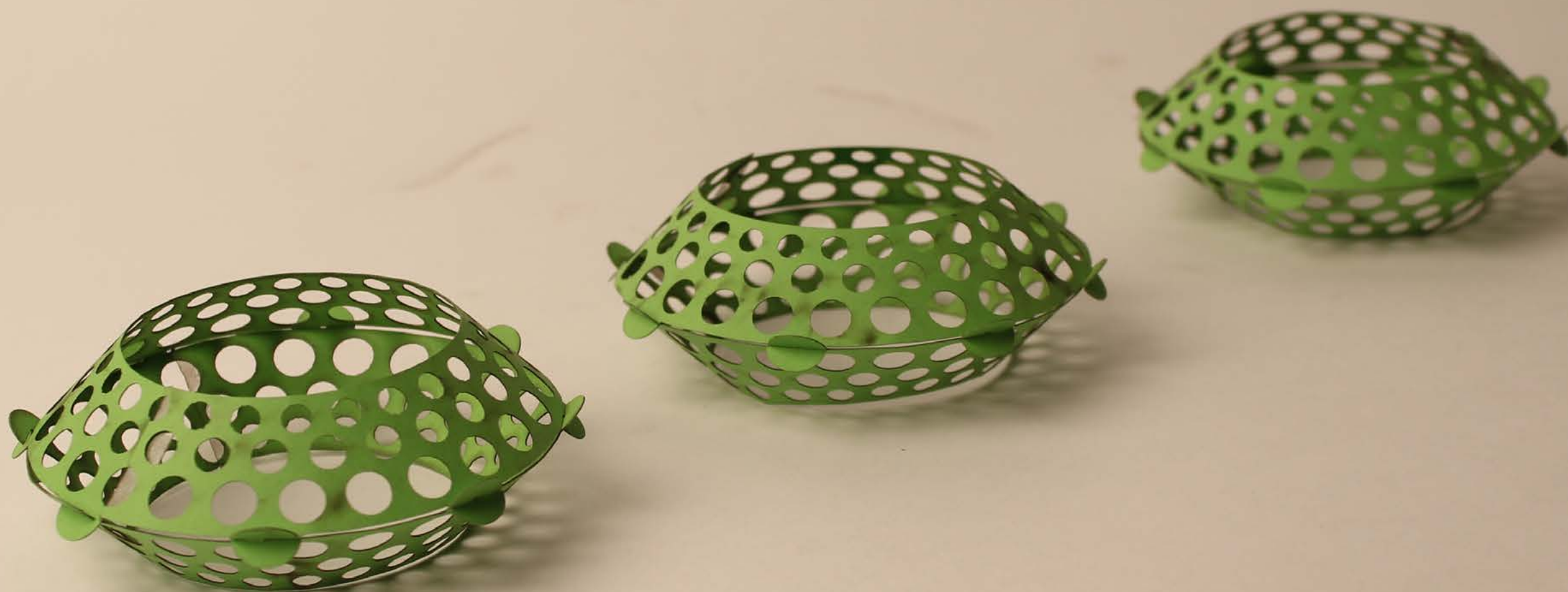
£ 2.16



£ 2.16



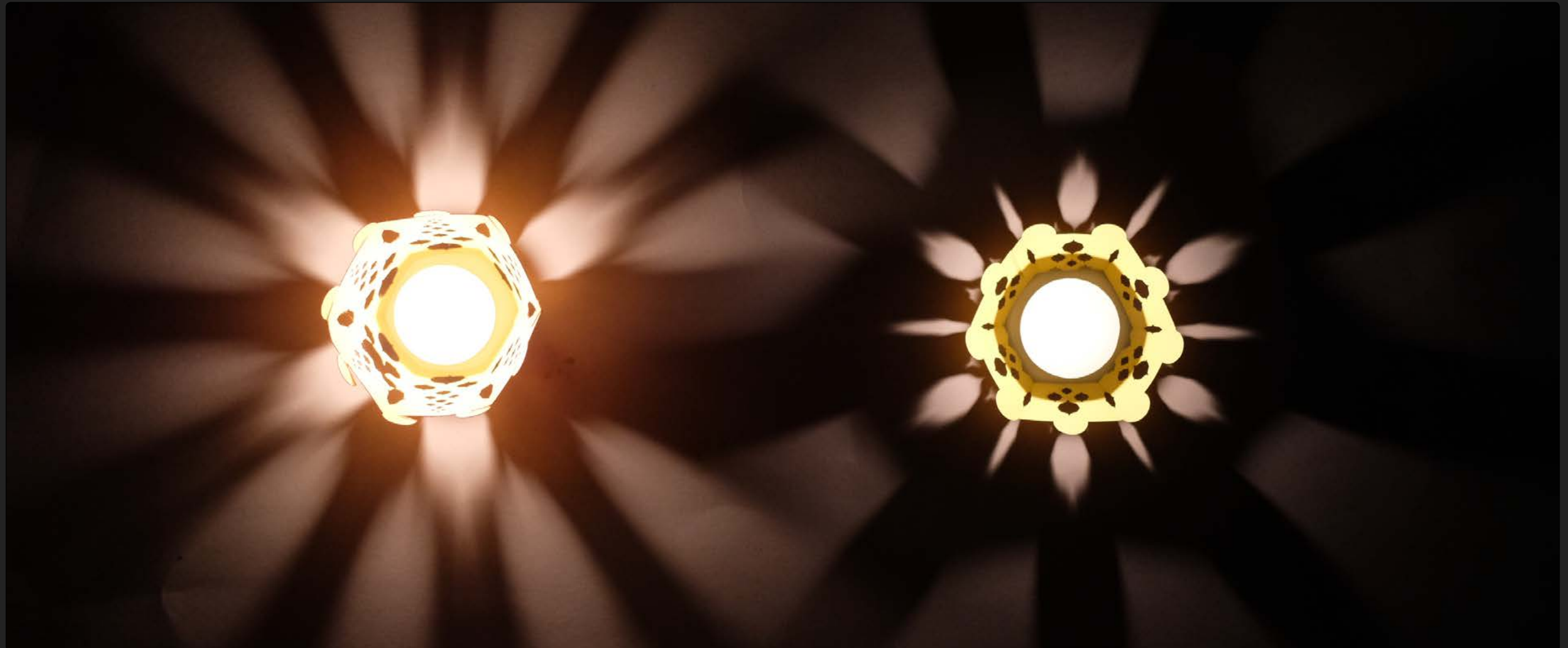
£ 2.1c



£ 2.1c



£ 2.1/ Observation and Insight



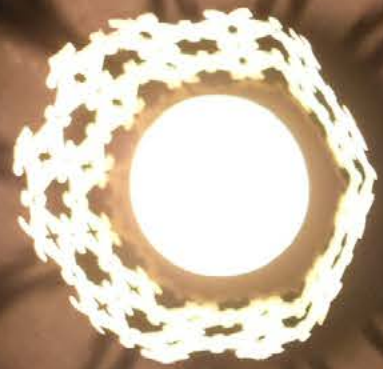
£ 2.1/ Observation and Insight

White Screen



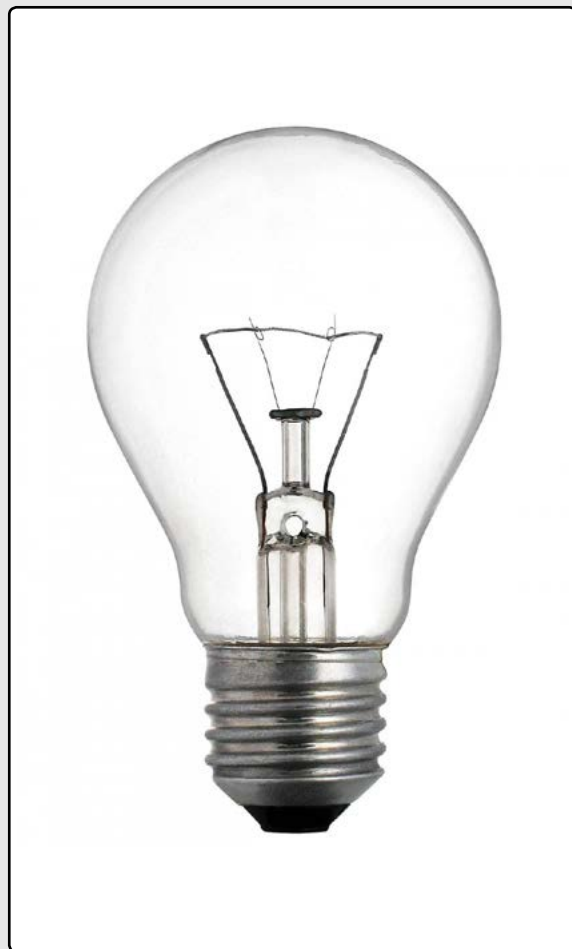
£ 2.1/ Observation and Insight

Black Screen



£ 2.2

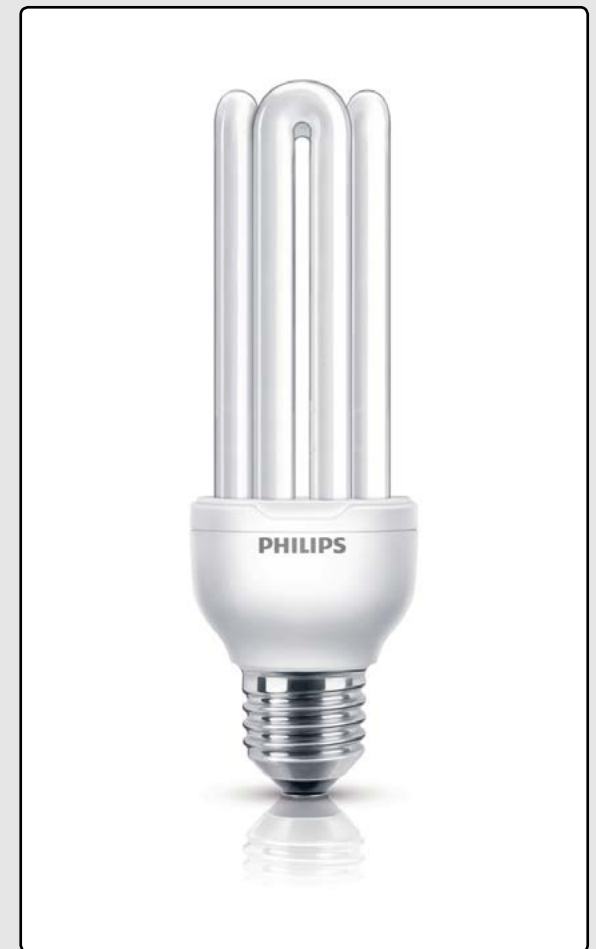
Electric Light source



Incandescent Bulb

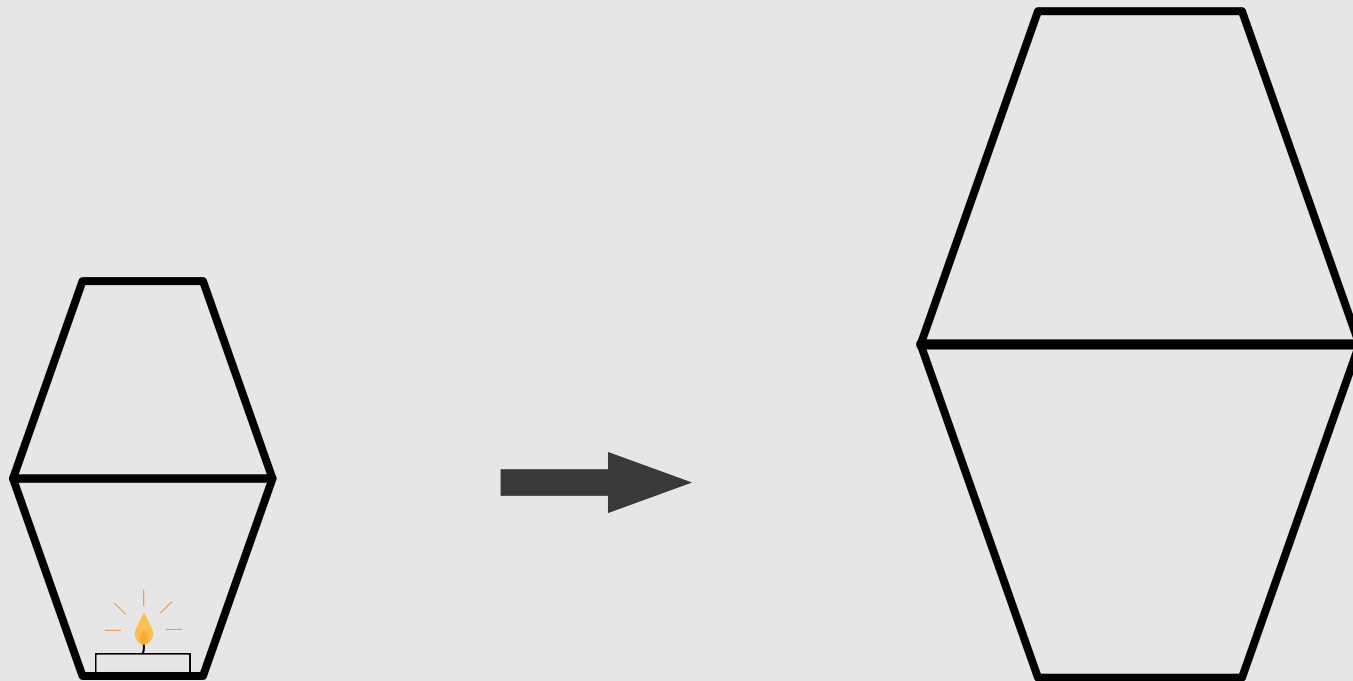


LED Candle Bulb

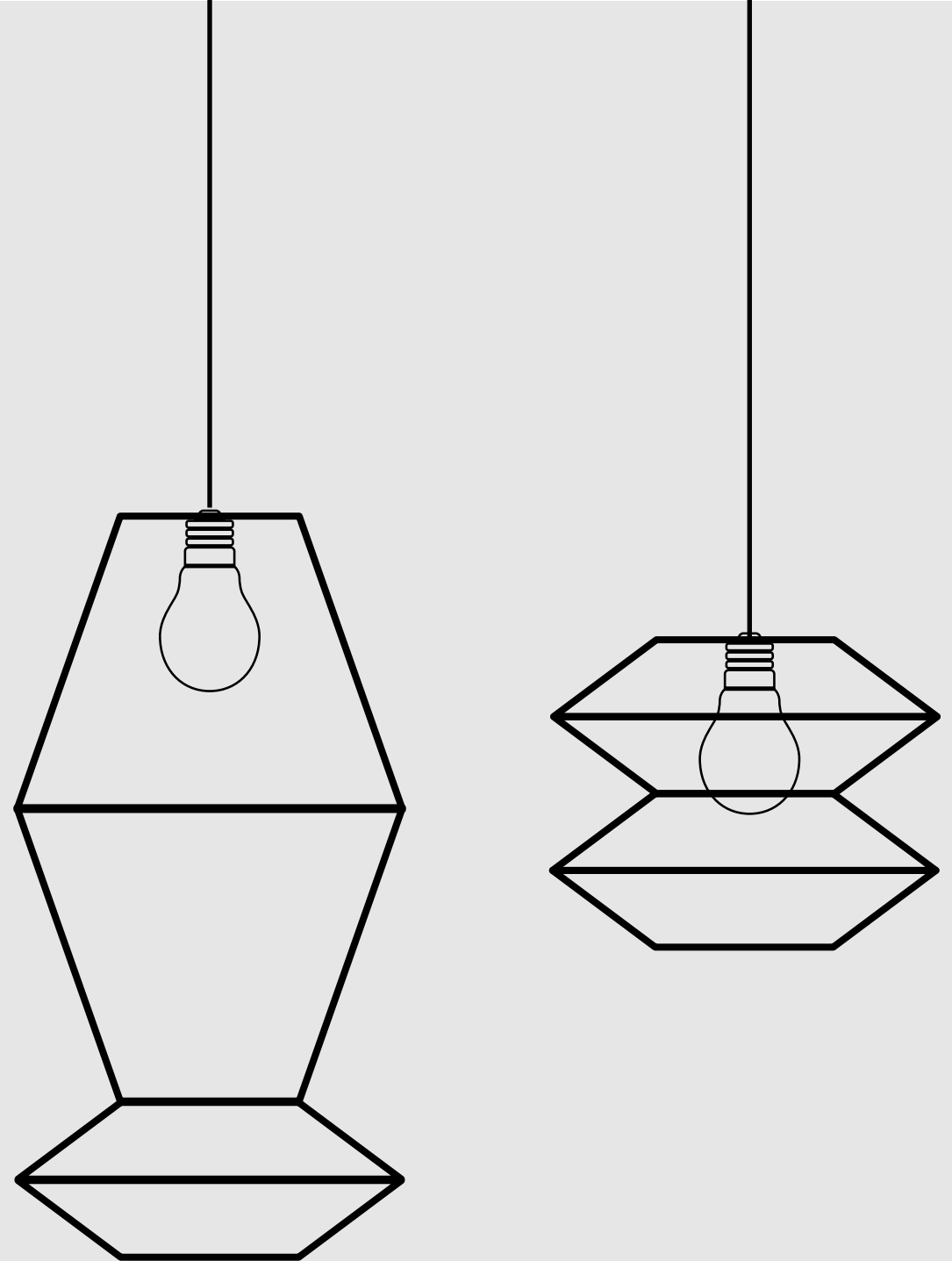


CFL Bulb

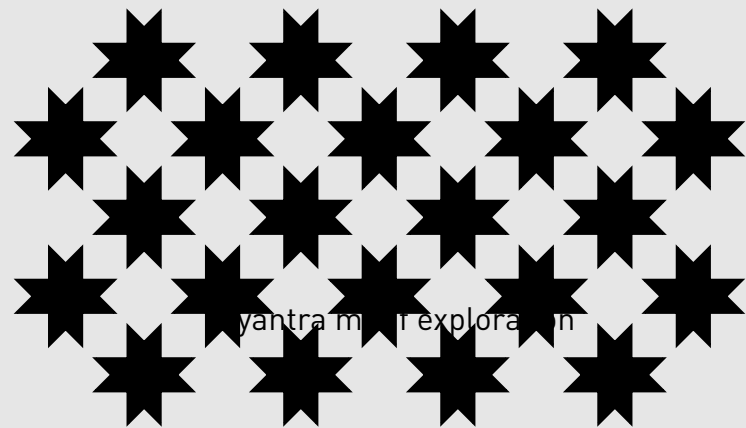
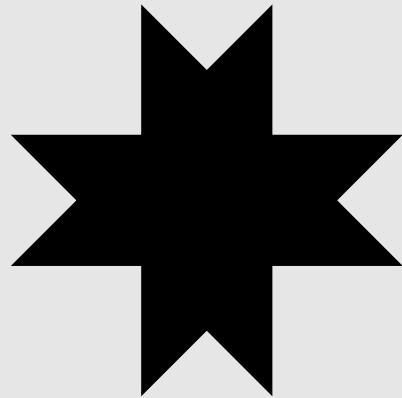
§ 2.2



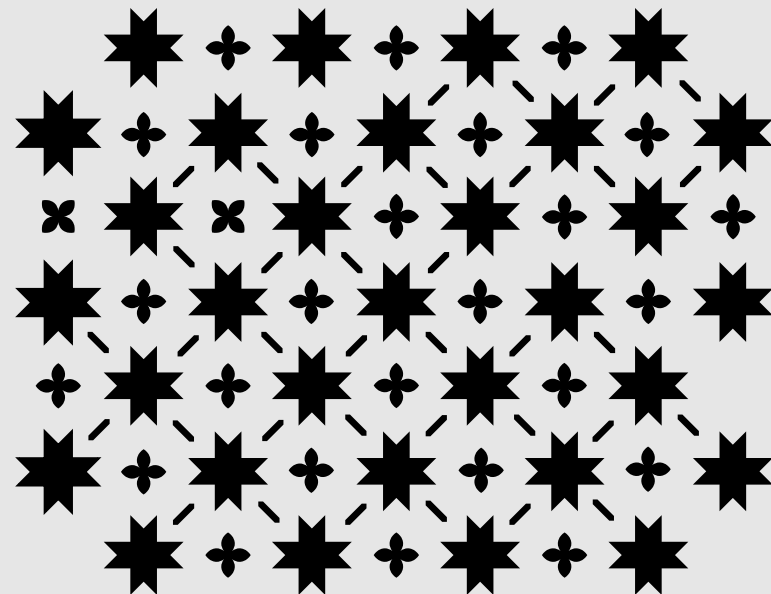
£ 2.2



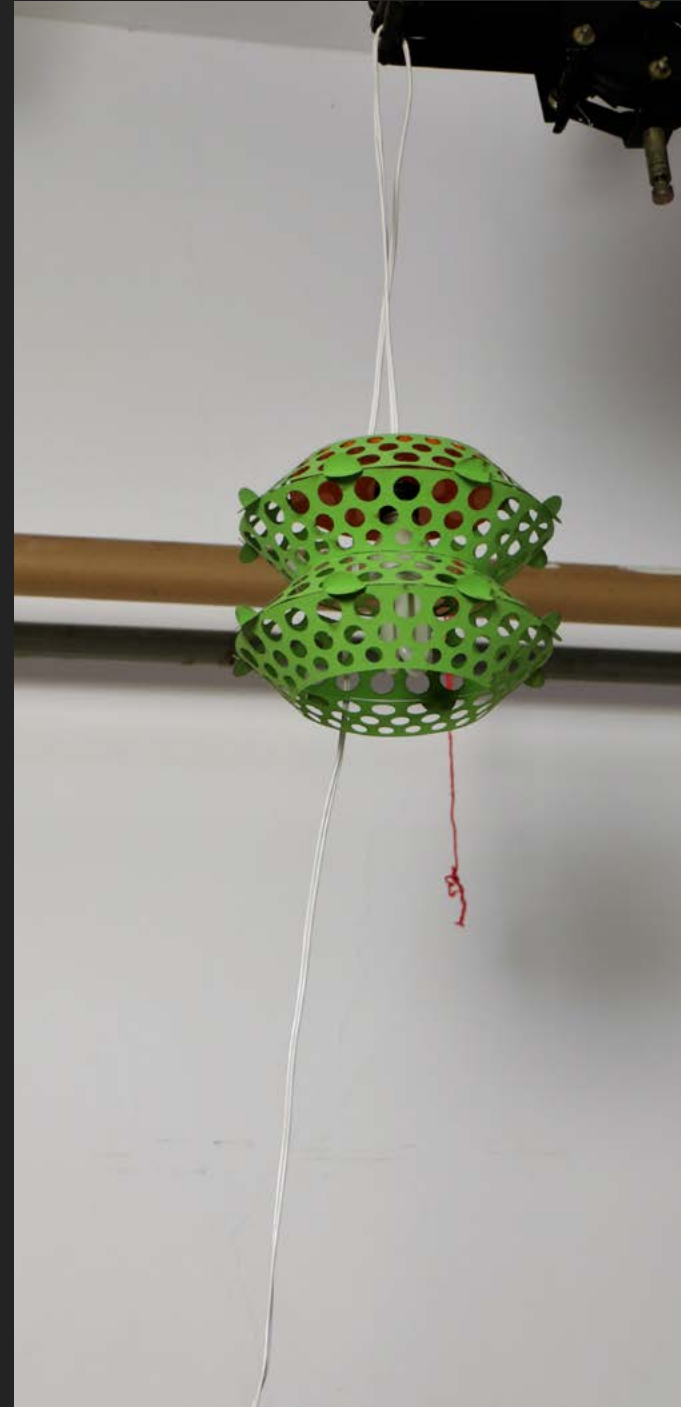
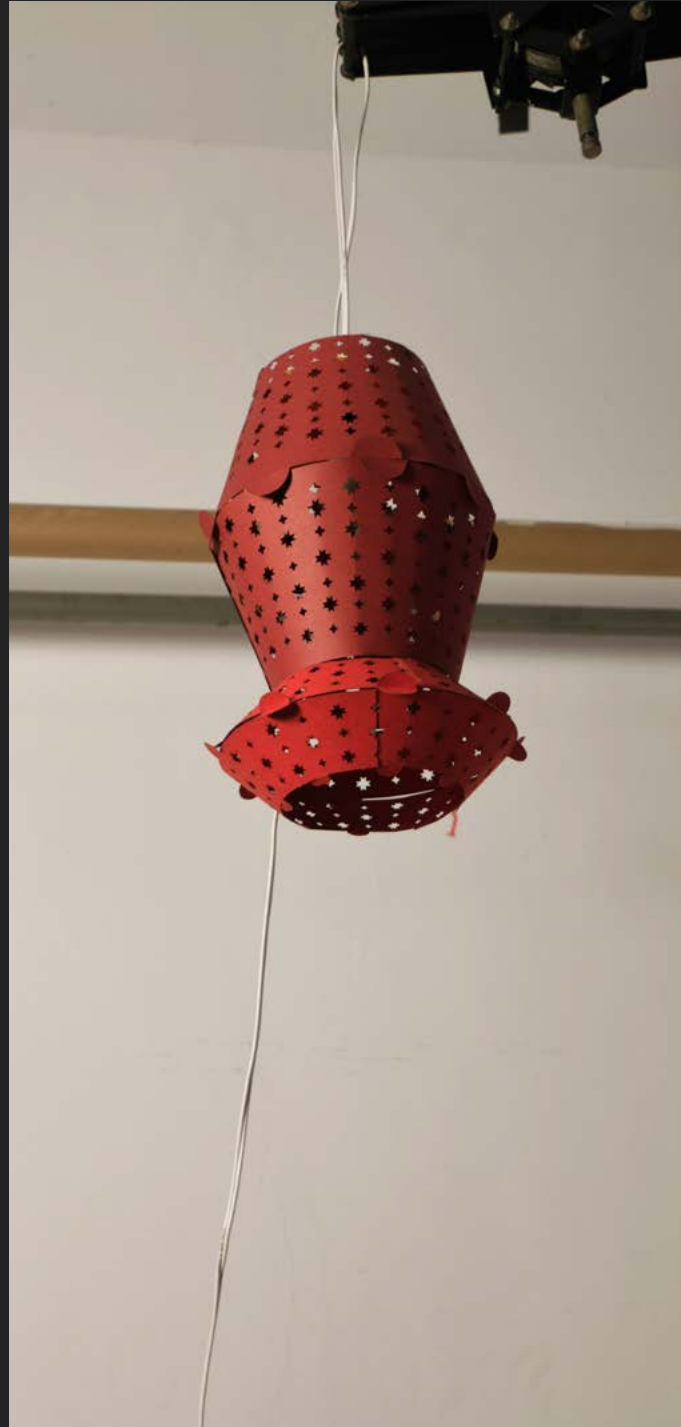
Ε 2.2



yantra m...i exploration



Ε 2.2/ Pendant Lamps



ε 2.2a

Incandescent Bulb
multiple, fuzzy



Ε 2.2α

Incandescent Bulb
multiple, fuzzy



LED Candle Bulb
relatively sharp



§ 2.2a

Incandescent Bulb
multiple, fuzzy



LED Candle Bulb
relatively sharp



CFL Bulb
no shadow



£ 2.2b

Incandescent Bulb
multiple, fuzzy



LED Candle Bulb
relatively sharp



CFL Bulb
no shadow

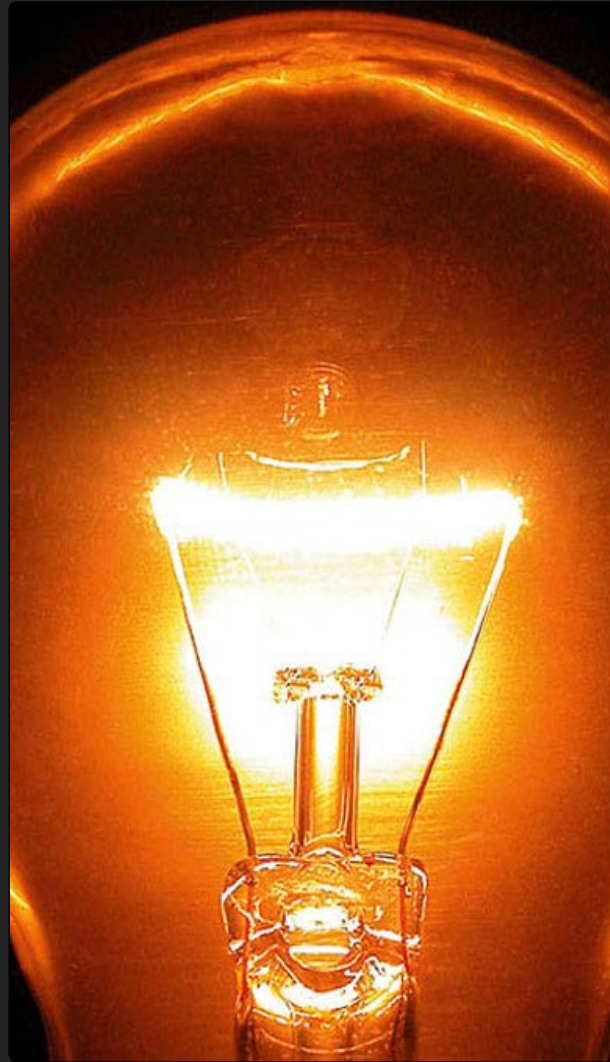


£ 2.2a/ Observation and Insight

Why Shadow
behaves
differently
for different
bulbs?

£ 2.2a/ Observation and Insight

Why Shadow
behaves
differently
for different
bulbs?



Line
source



Point
Source



Distributed
Source

£ 2.2a/ Observation and Insight

Incandescent Bulb
multiple, fuzzy



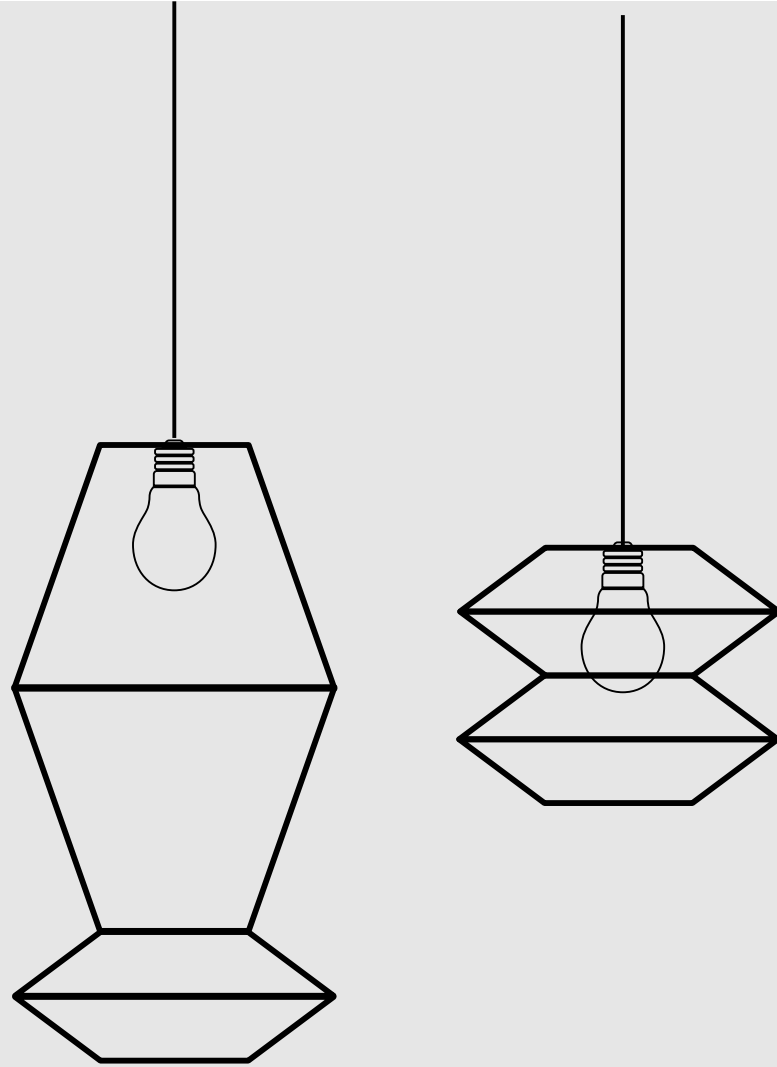
LED Candle Bulb
relatively sharp



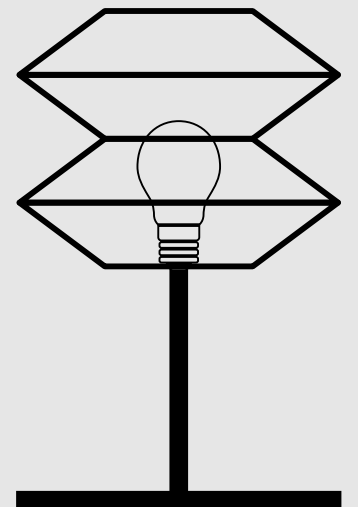
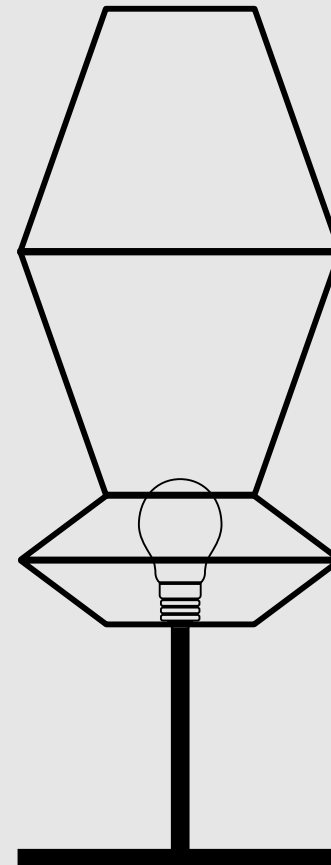
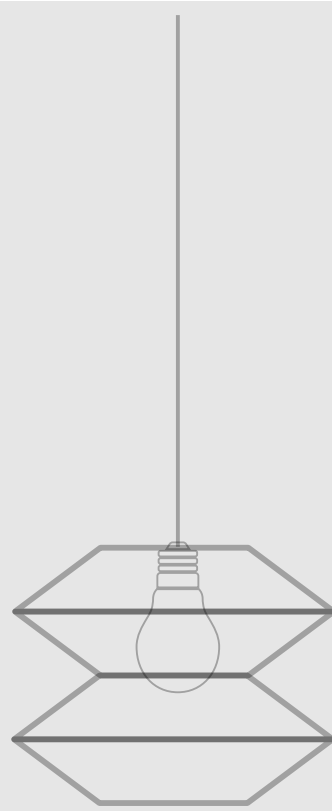
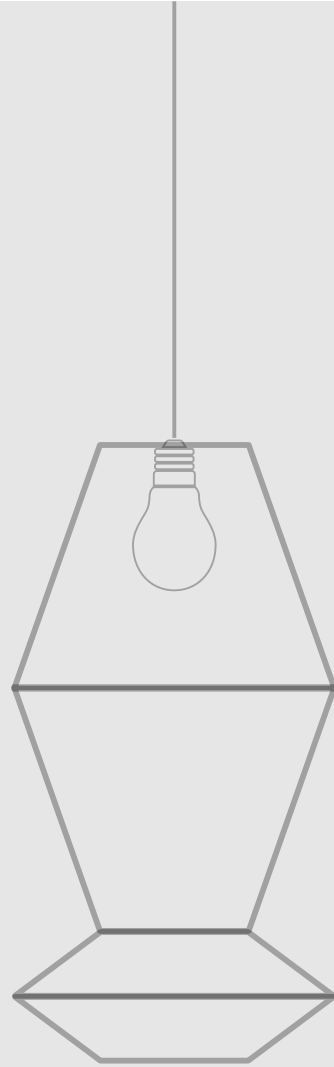
CFL Bulb
no shadow

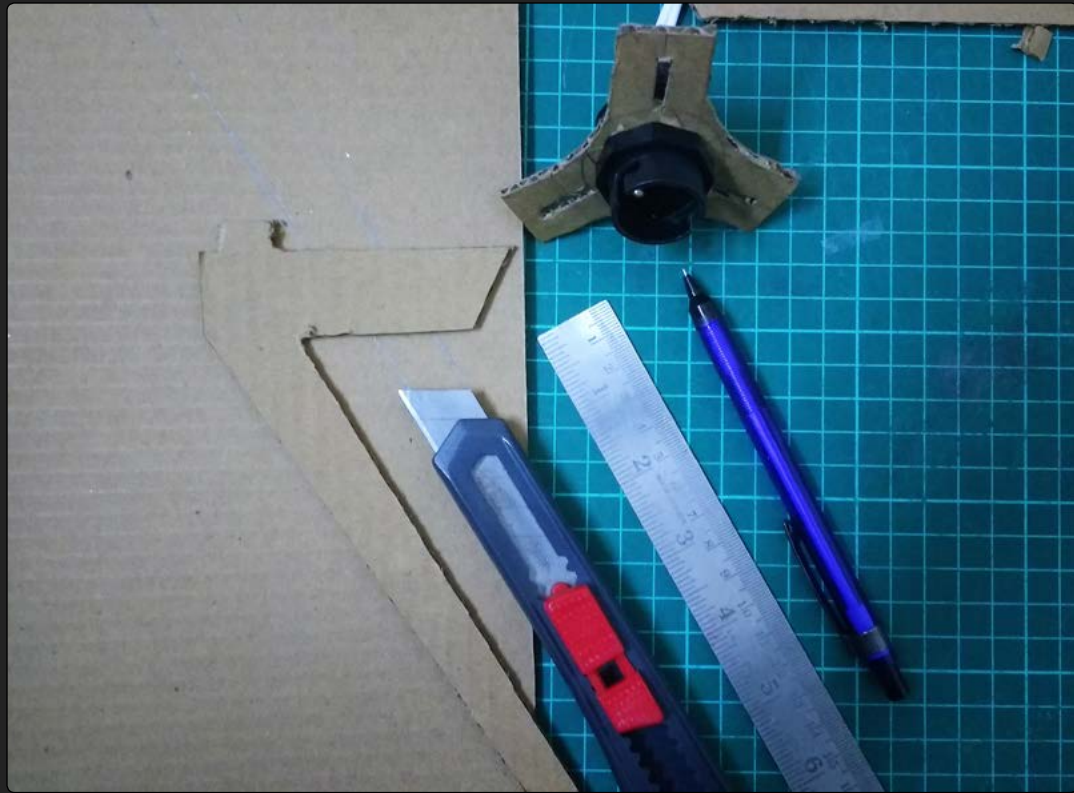


£ 2.3

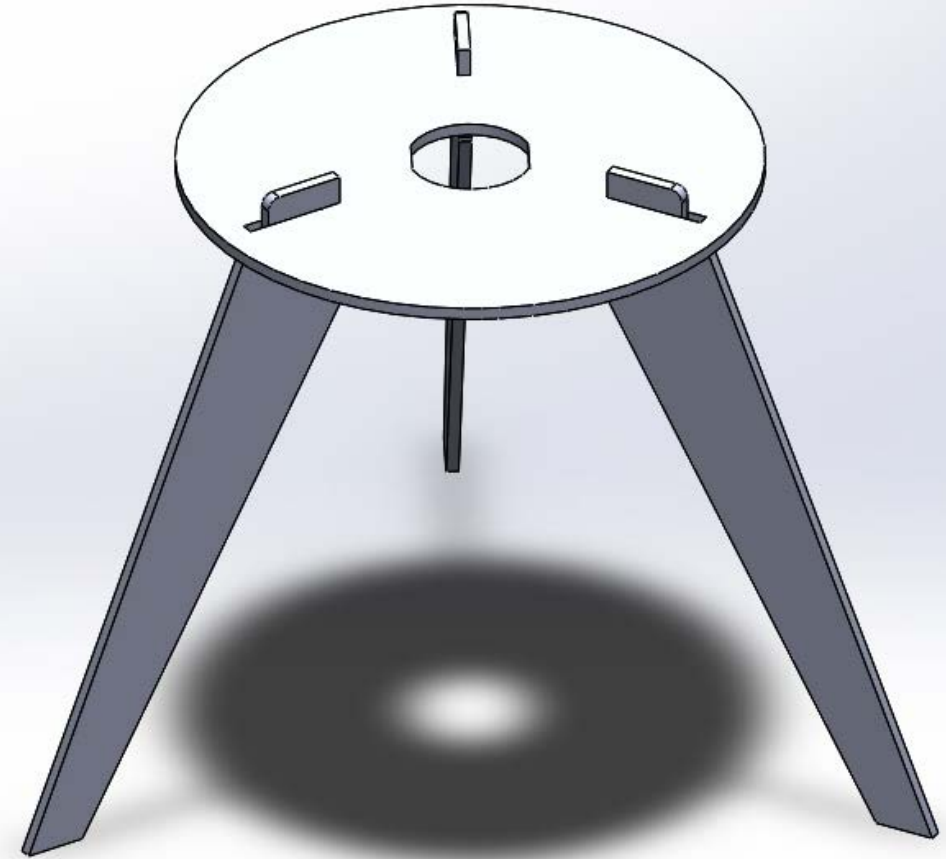
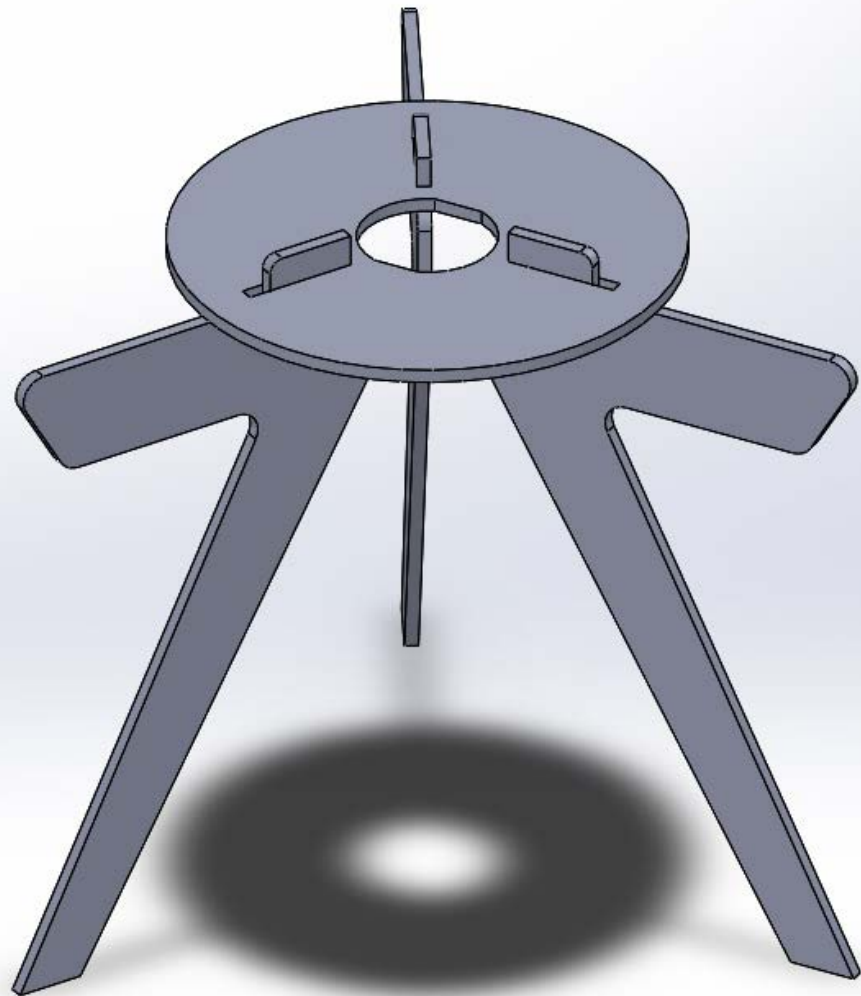


£ 2.3

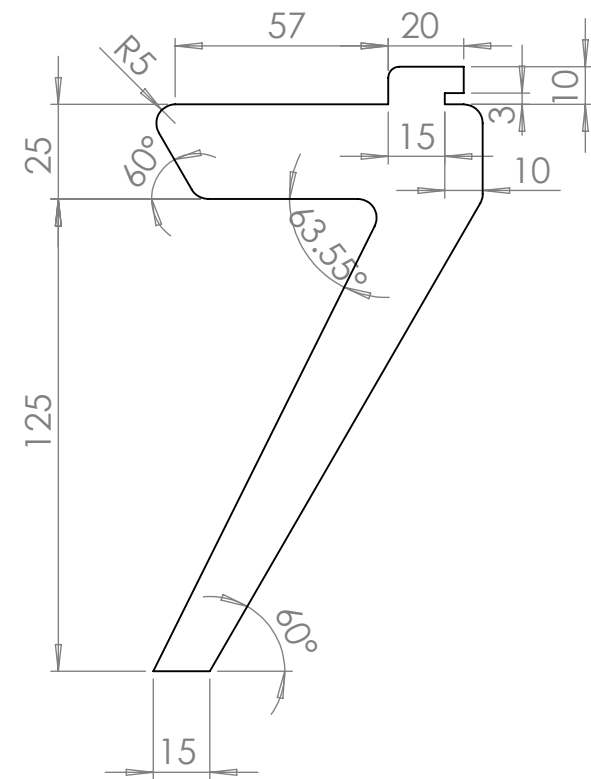
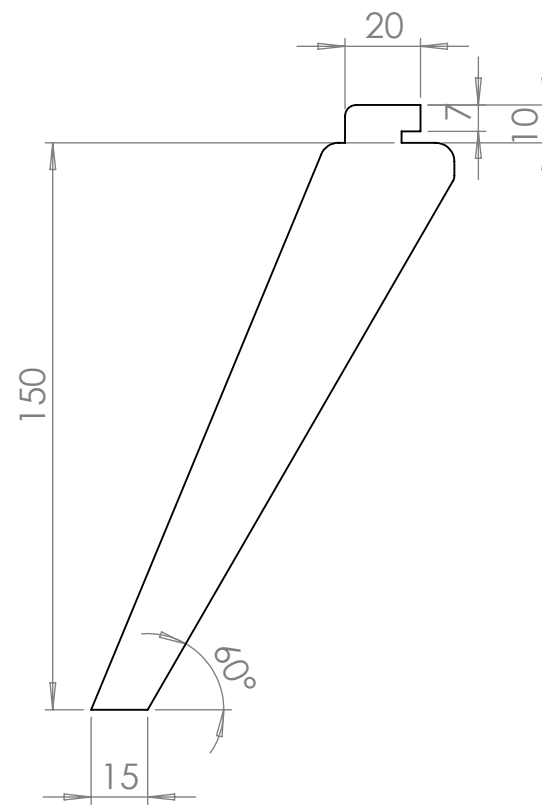
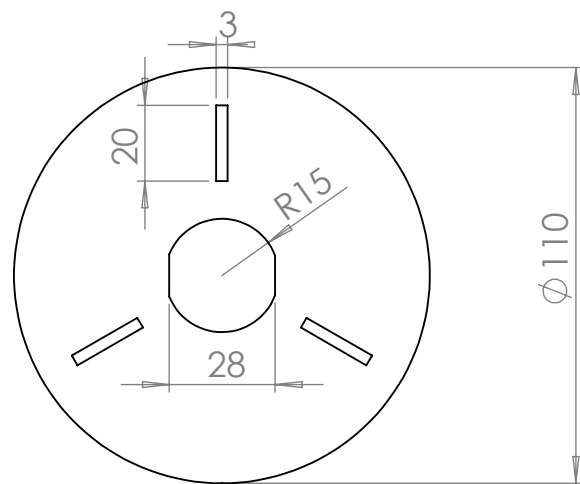
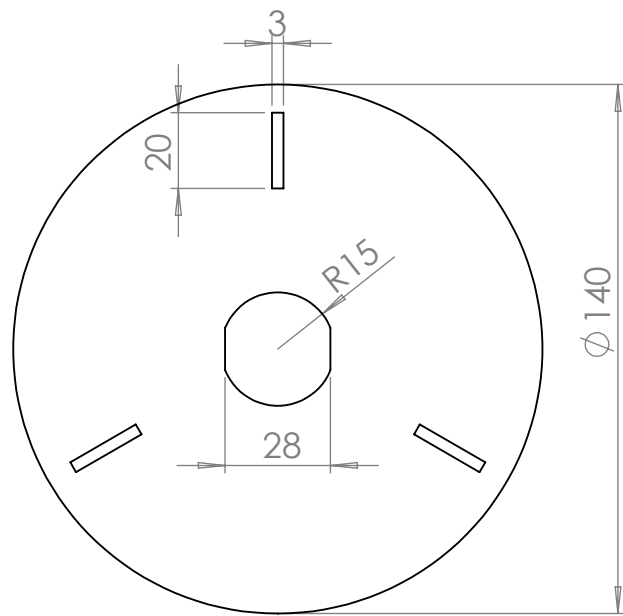




£ 2.3/ CAD model of stand



Ex 2.3/ Drawing & Dimensions







£ 2.3/ Corrugated stand



£ 2.3/ Acrylic Stand



£ 2.3/ Table lamps



£ 2.3/ α

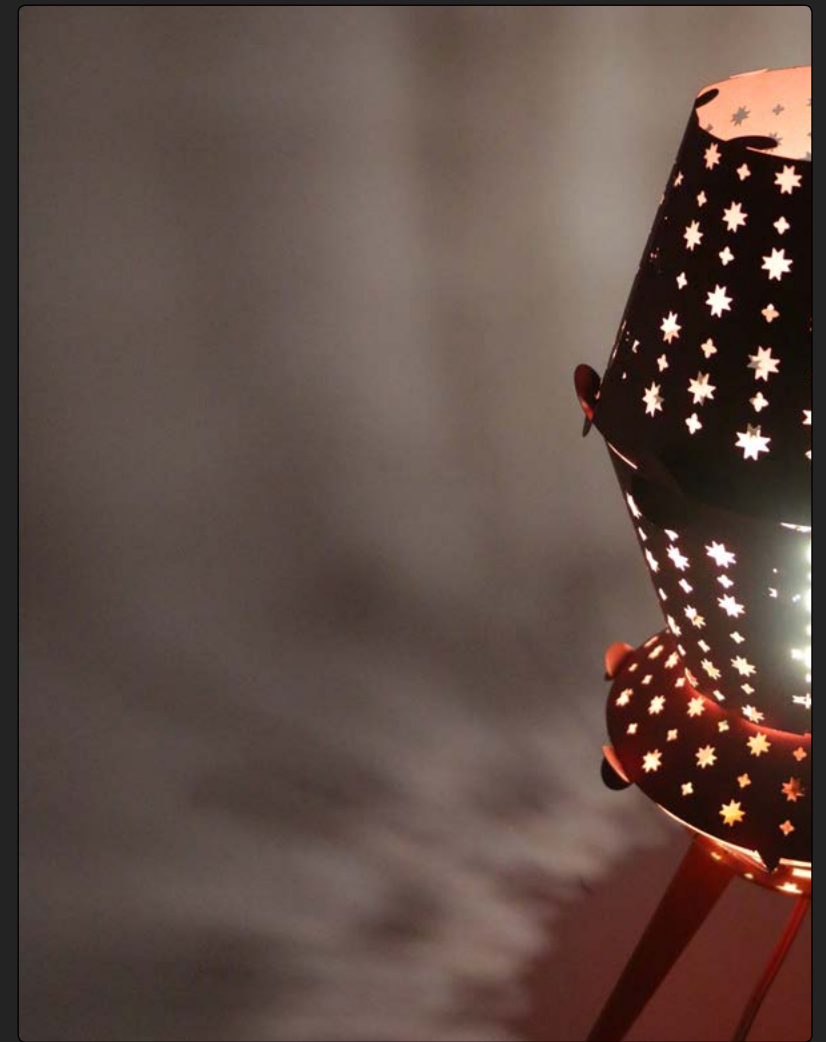
Incandescent Bulb
multiple, fuzzy



LED Candle Bulb
relatively sharp

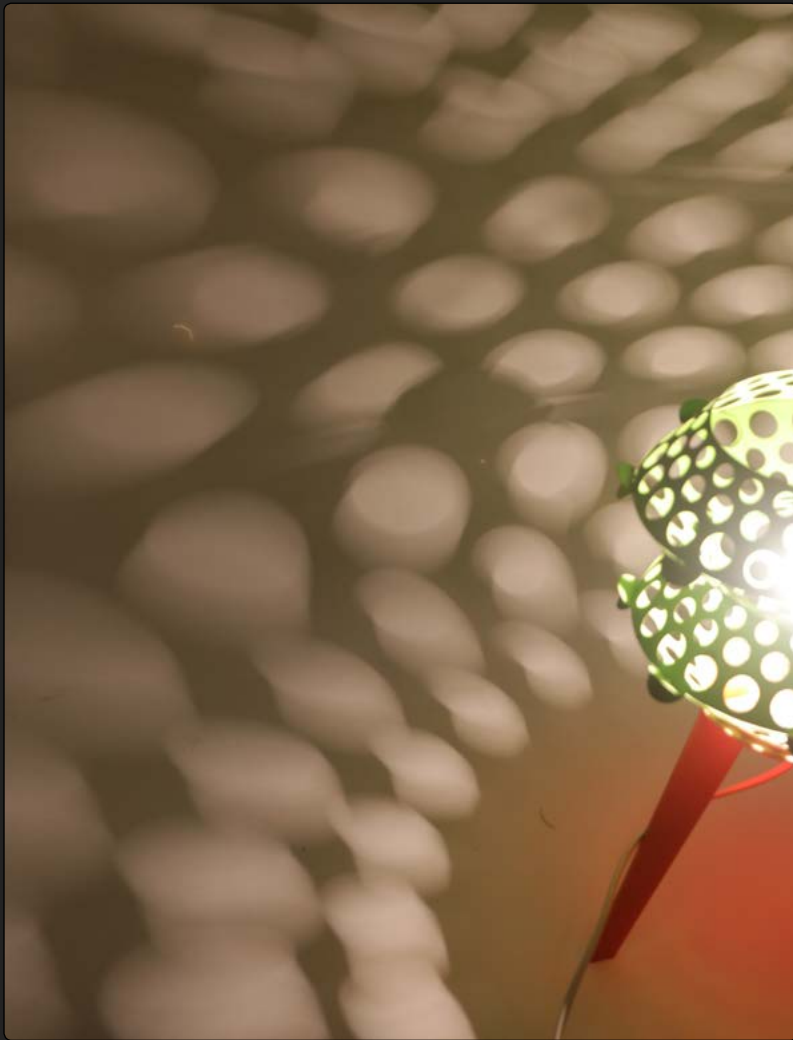


CFL Bulb
no shadow



£ 2.3/ l

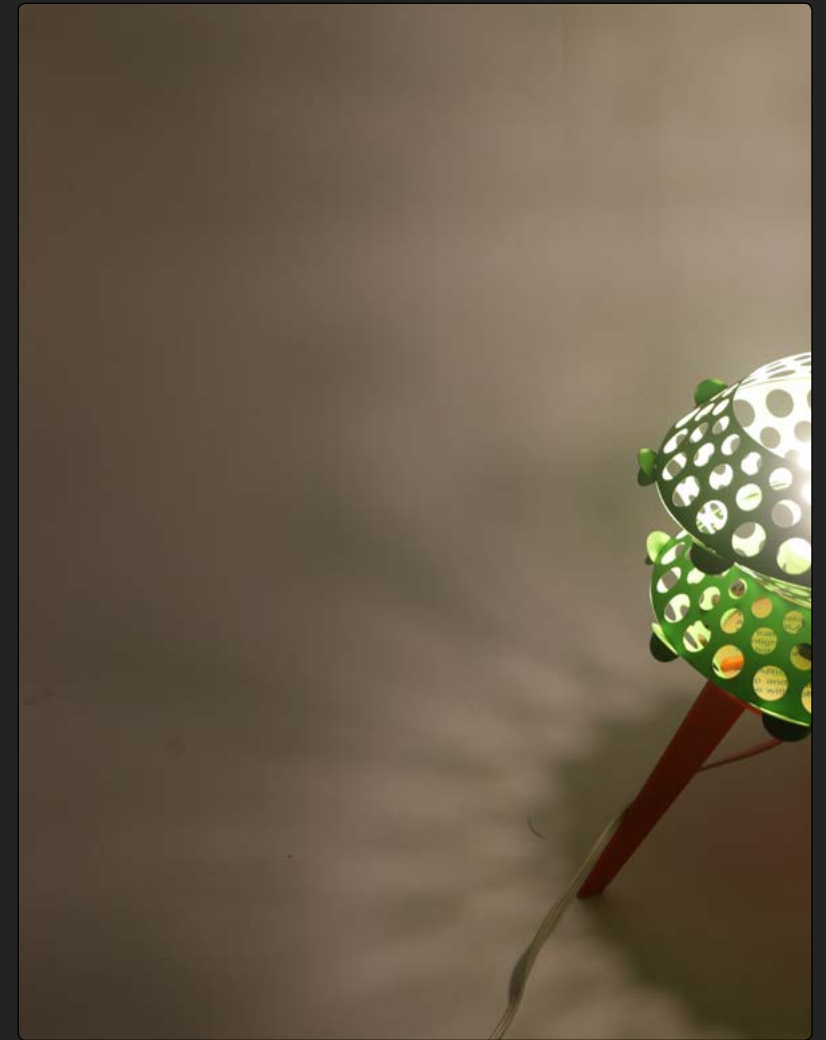
Incandescent Bulb
multiple, fuzzy



LED Candle Bulb
relatively sharp



CFL Bulb
no shadow



£ 2.3/ c

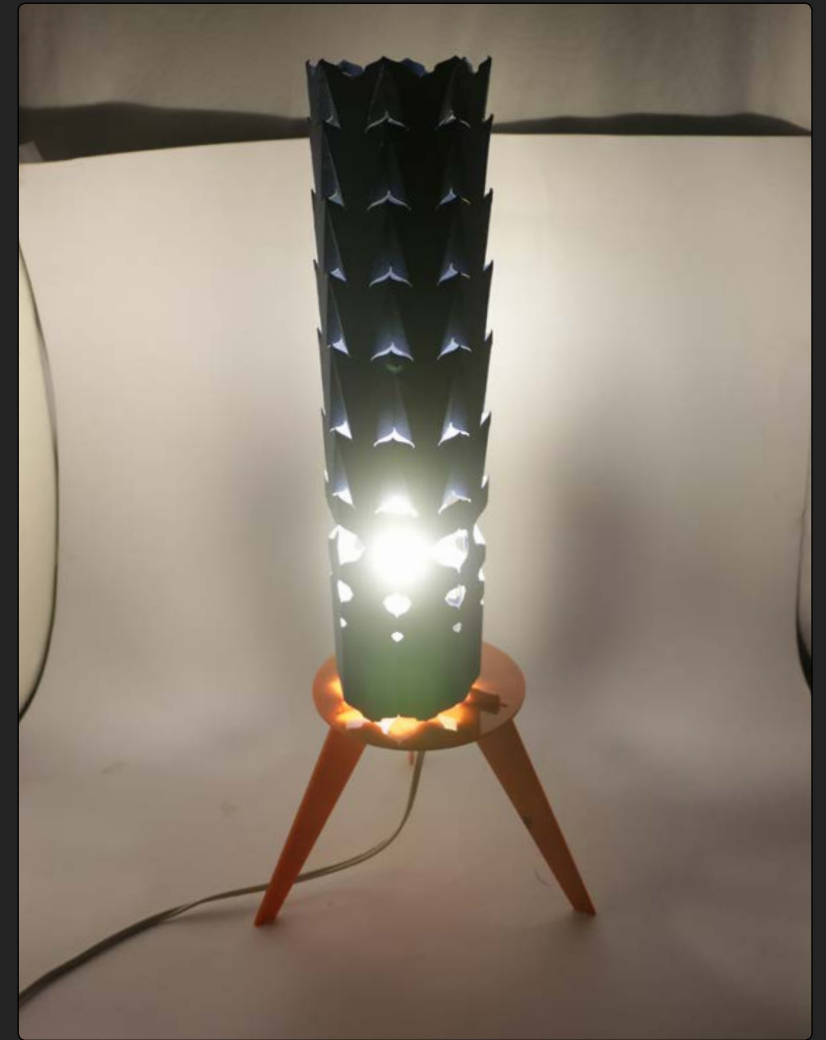
Incandescent Bulb
multiple, fuzzy



LED Candle Bulb
relatively sharp



CFL Bulb
no shadow



£ 2.3/ Observation & Insight

Glare
effect

Incandescent Bulb



LED Candle Bulb



CFL Bulb

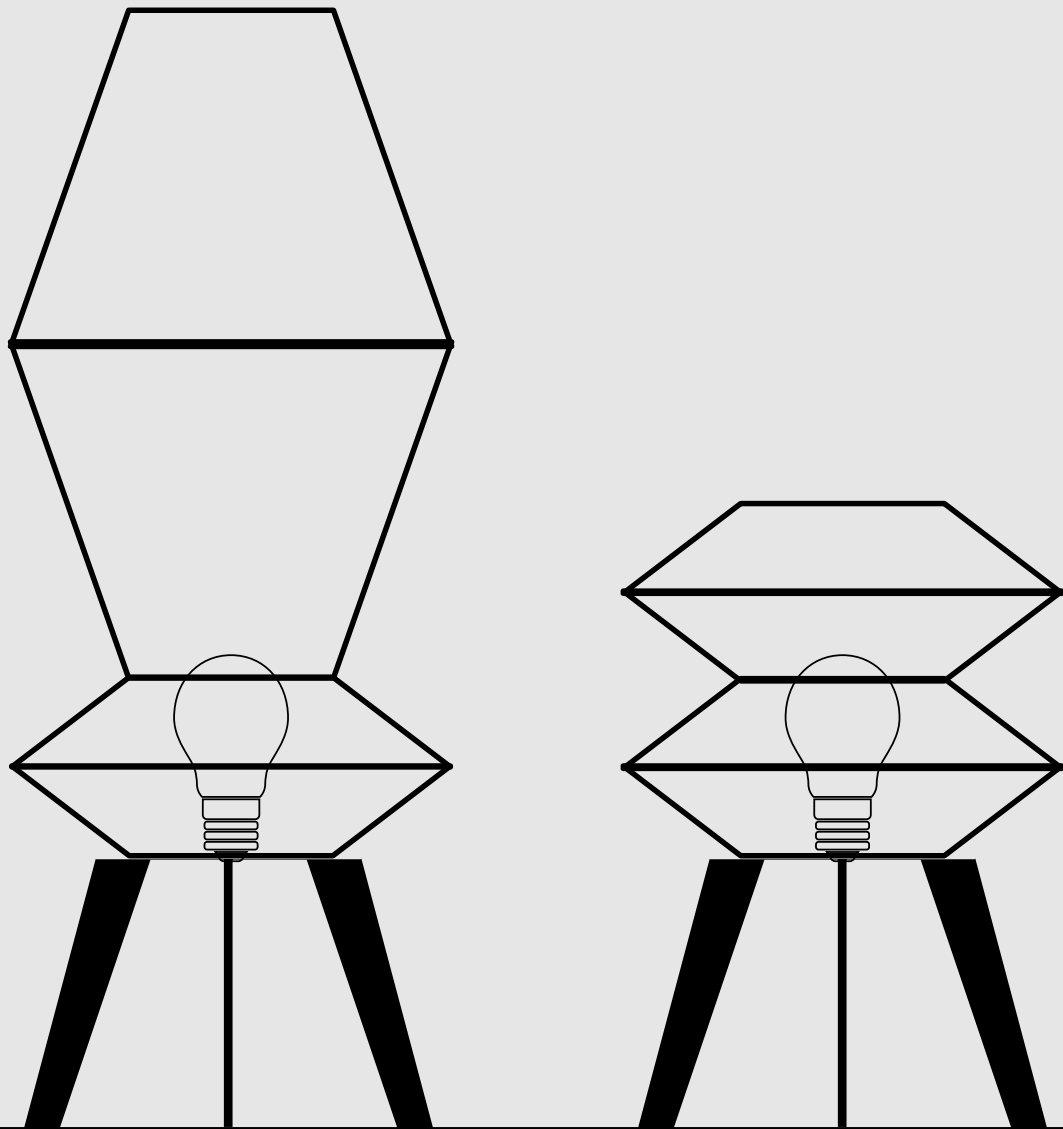


£ 2.3/ Observation & Insight

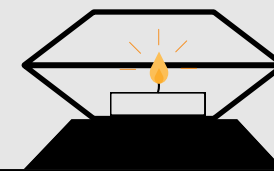
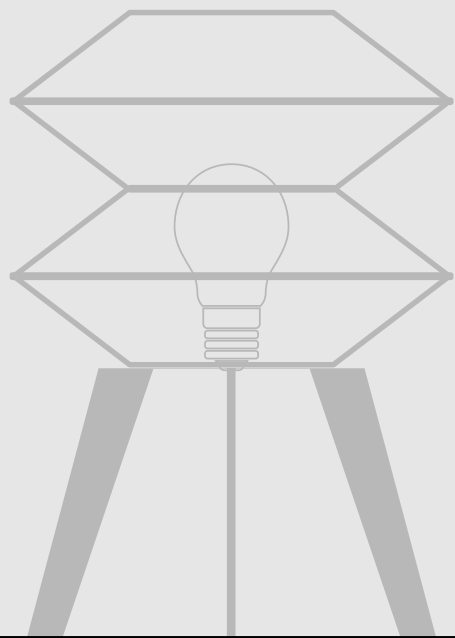
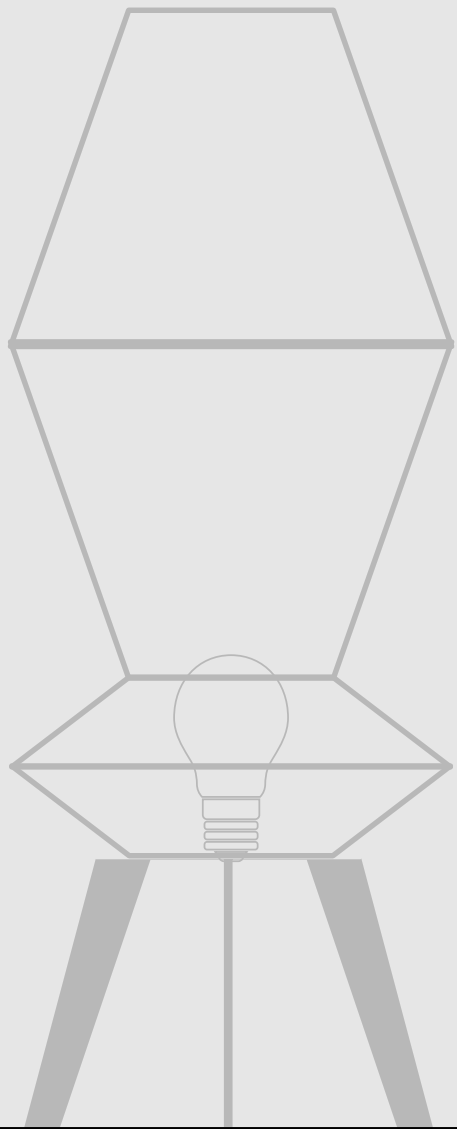
Figure &
ground effect



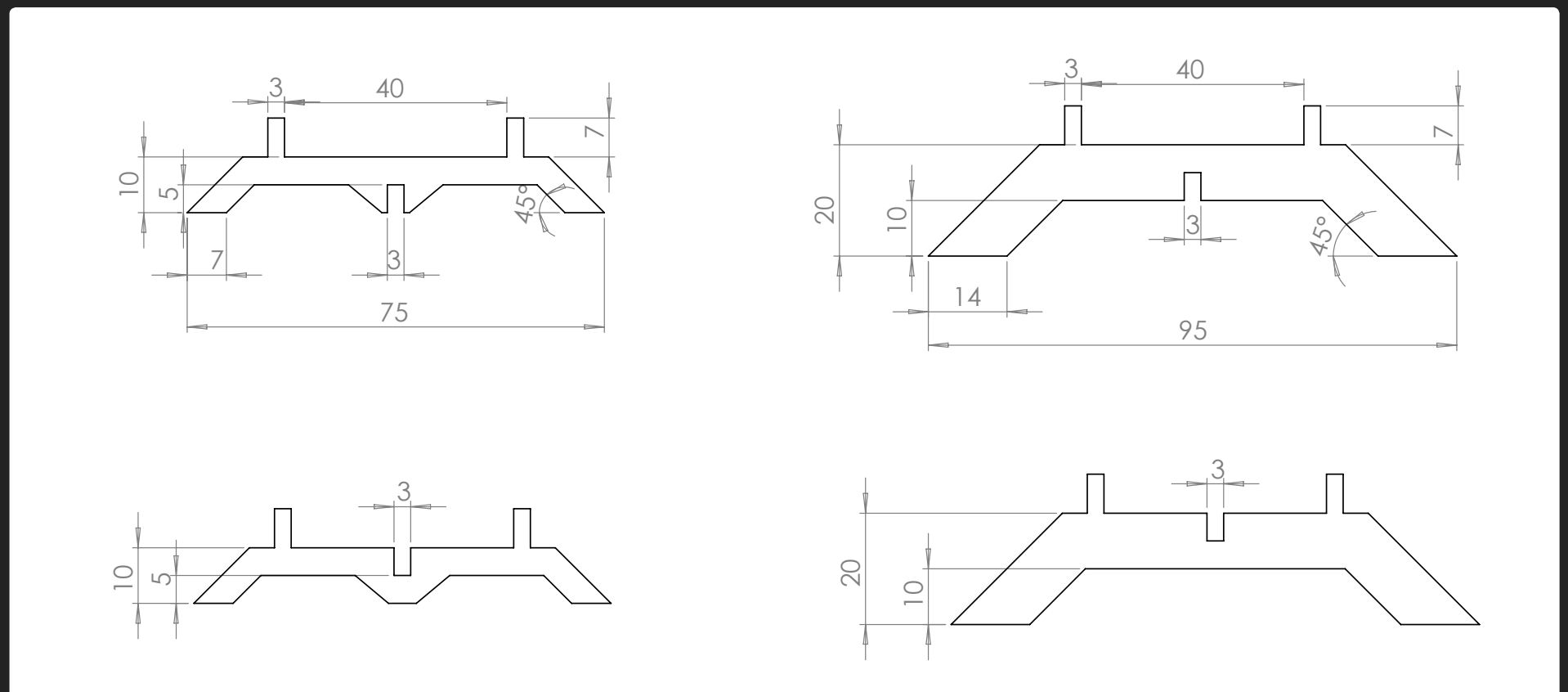
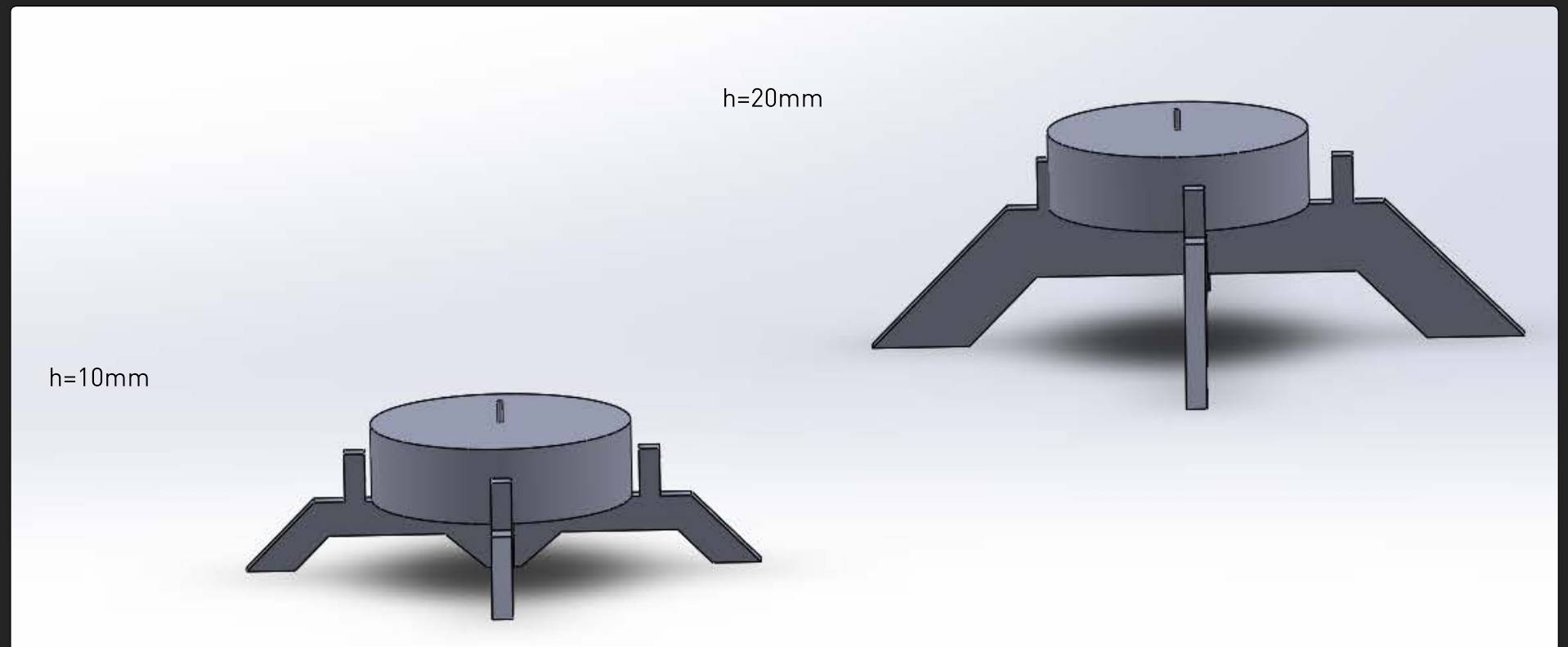
£ 2.4



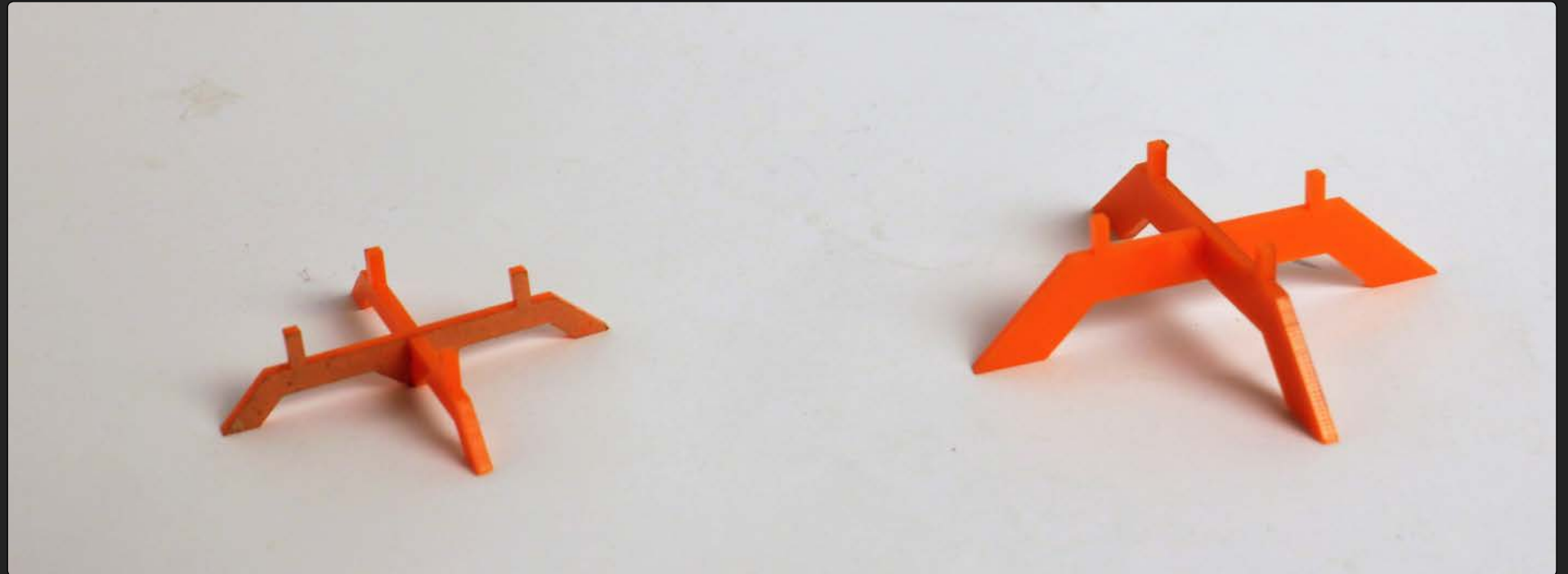
£ 2.4



Ex 2.4 / CAD model, drawing & dimensions

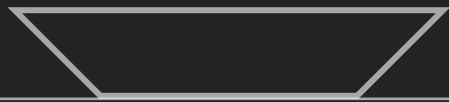


£ 2.4/ Acrylic Stands



ε 2.4

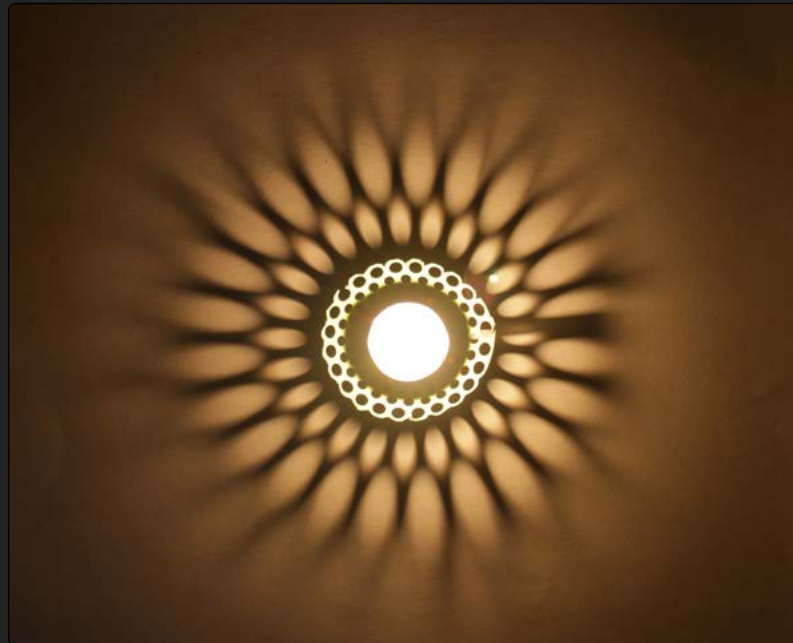
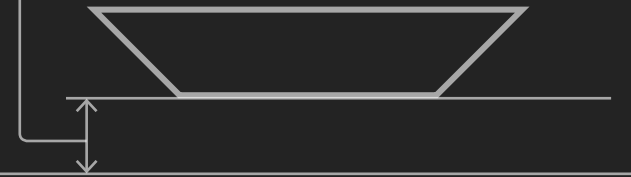
$h=0\text{mm}$



$h=10\text{mm}$

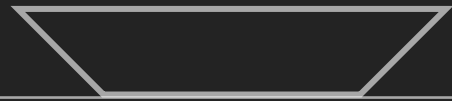


$h=20\text{mm}$



ε 2.4/ Observation & Insight

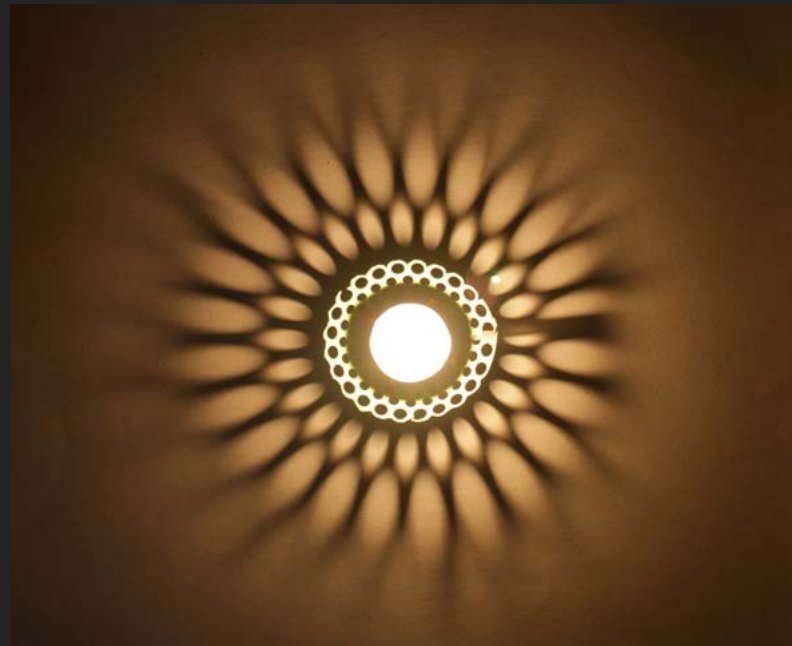
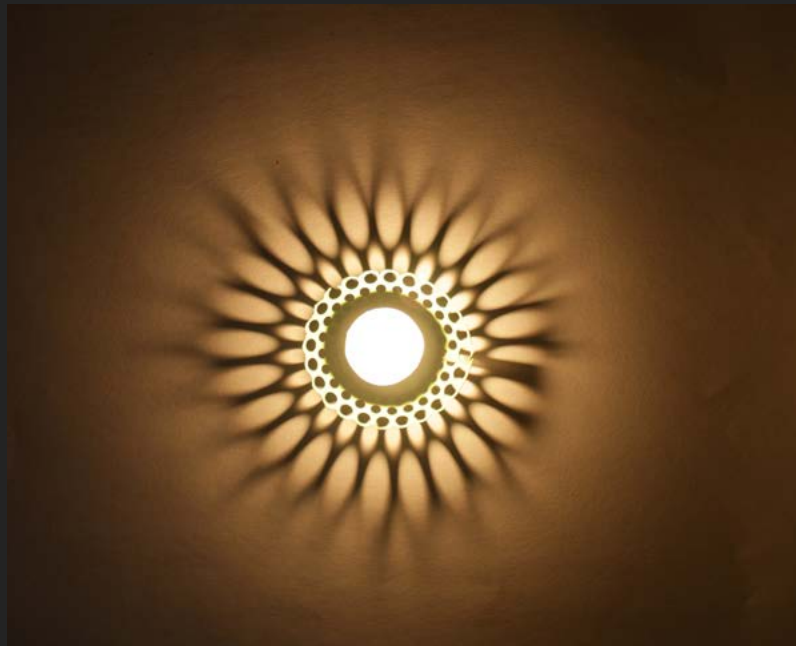
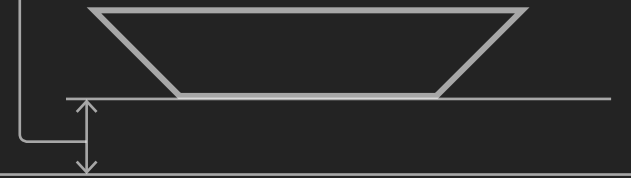
$h=0\text{mm}$



$h=10\text{mm}$



$h=20\text{mm}$



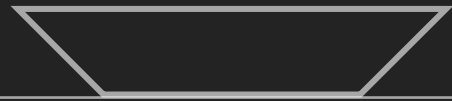
sharp



dull

§ 2.4 / Observation & Insight

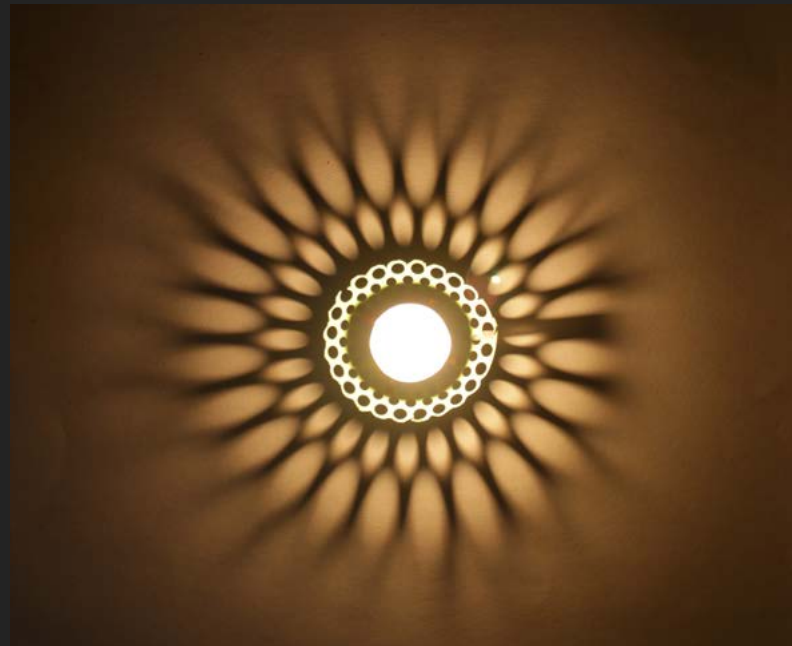
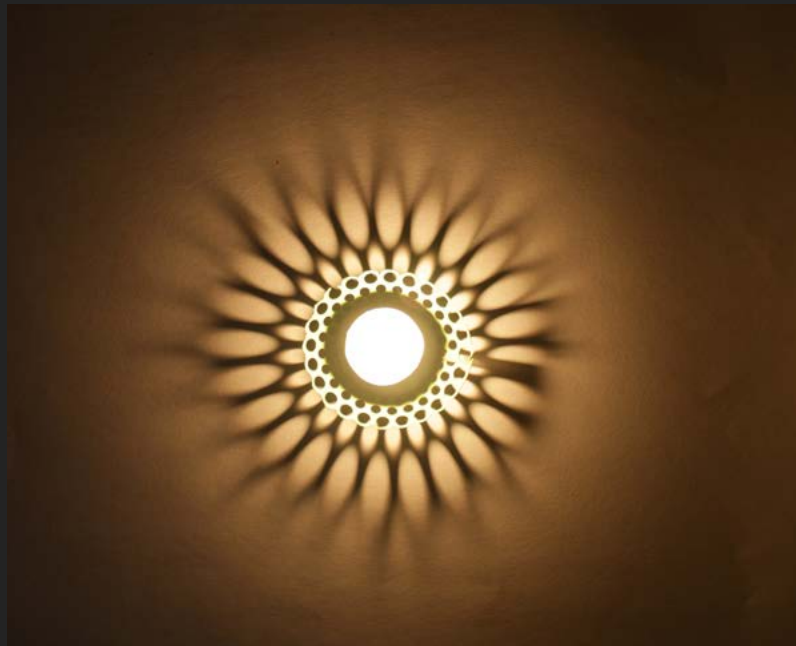
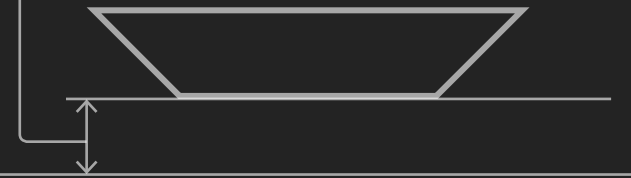
$h=0\text{mm}$



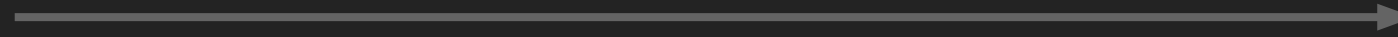
$h=10\text{mm}$



$h=20\text{mm}$



sharp



dull

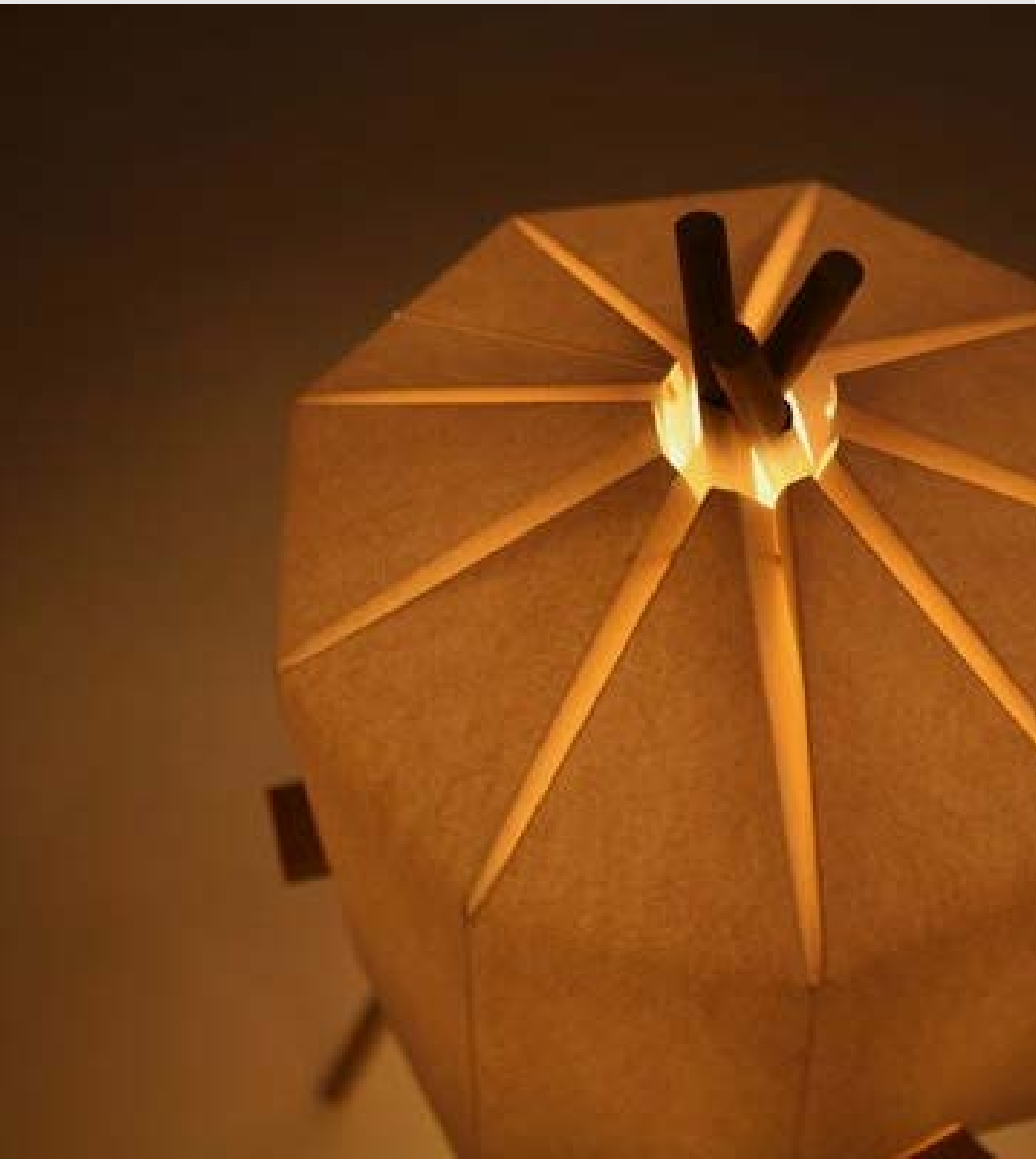
small



big

£ 2.5

Design by **Milk Design**



£ 2.5

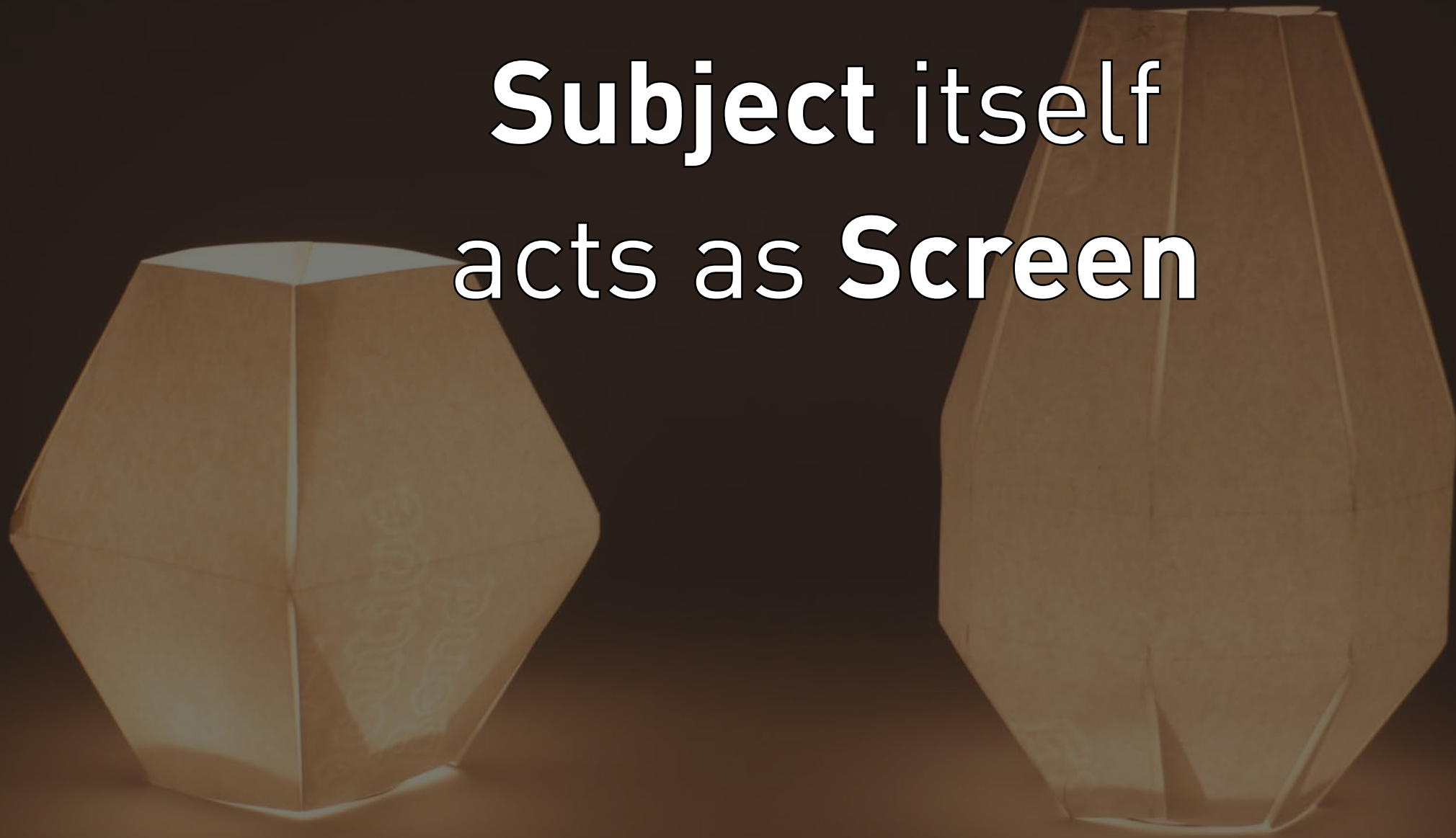


£ 2.5



£ 2.5/ Observation & Insight

**Subject itself
acts as Screen**



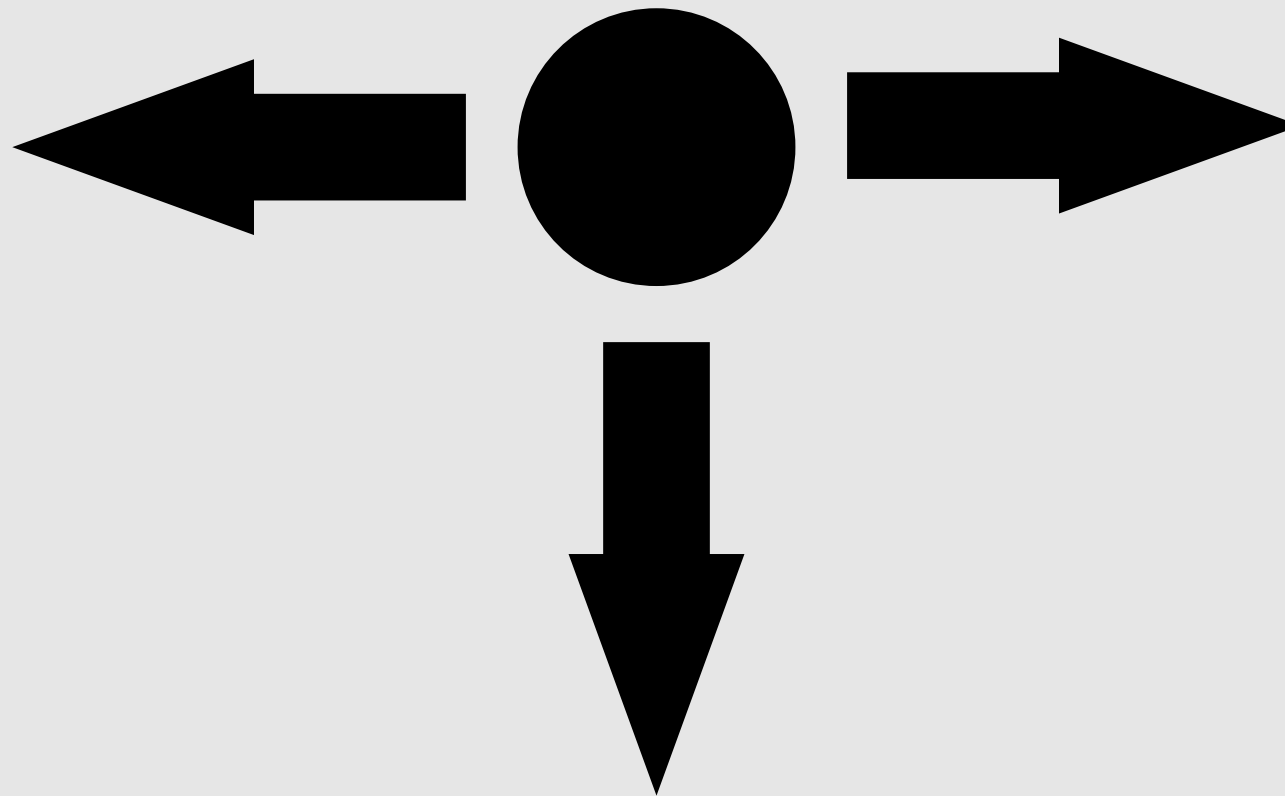
£ 2.5/ Observation & Insight



Exploration 3

Exploration 3

deep and wide

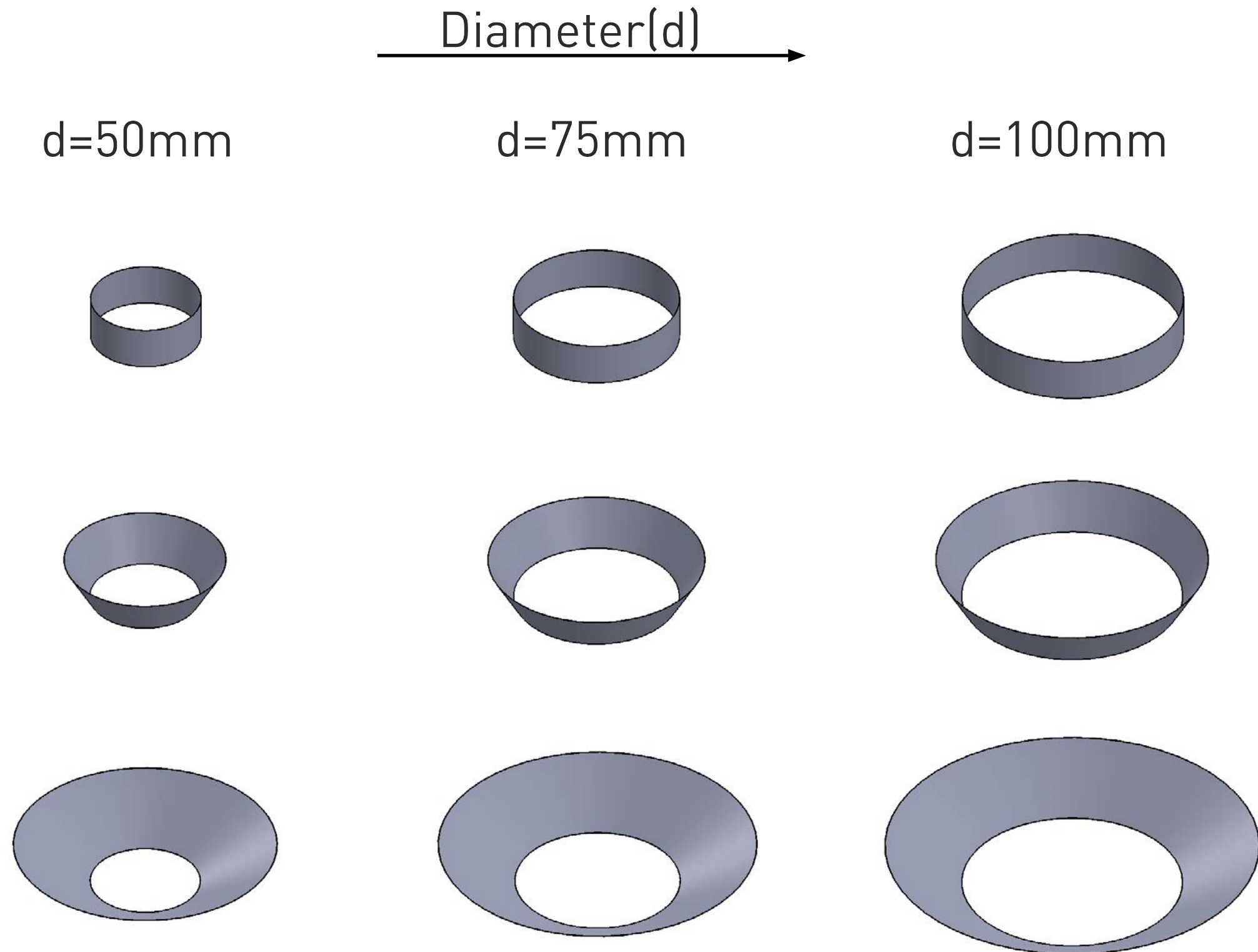


Exploration 3

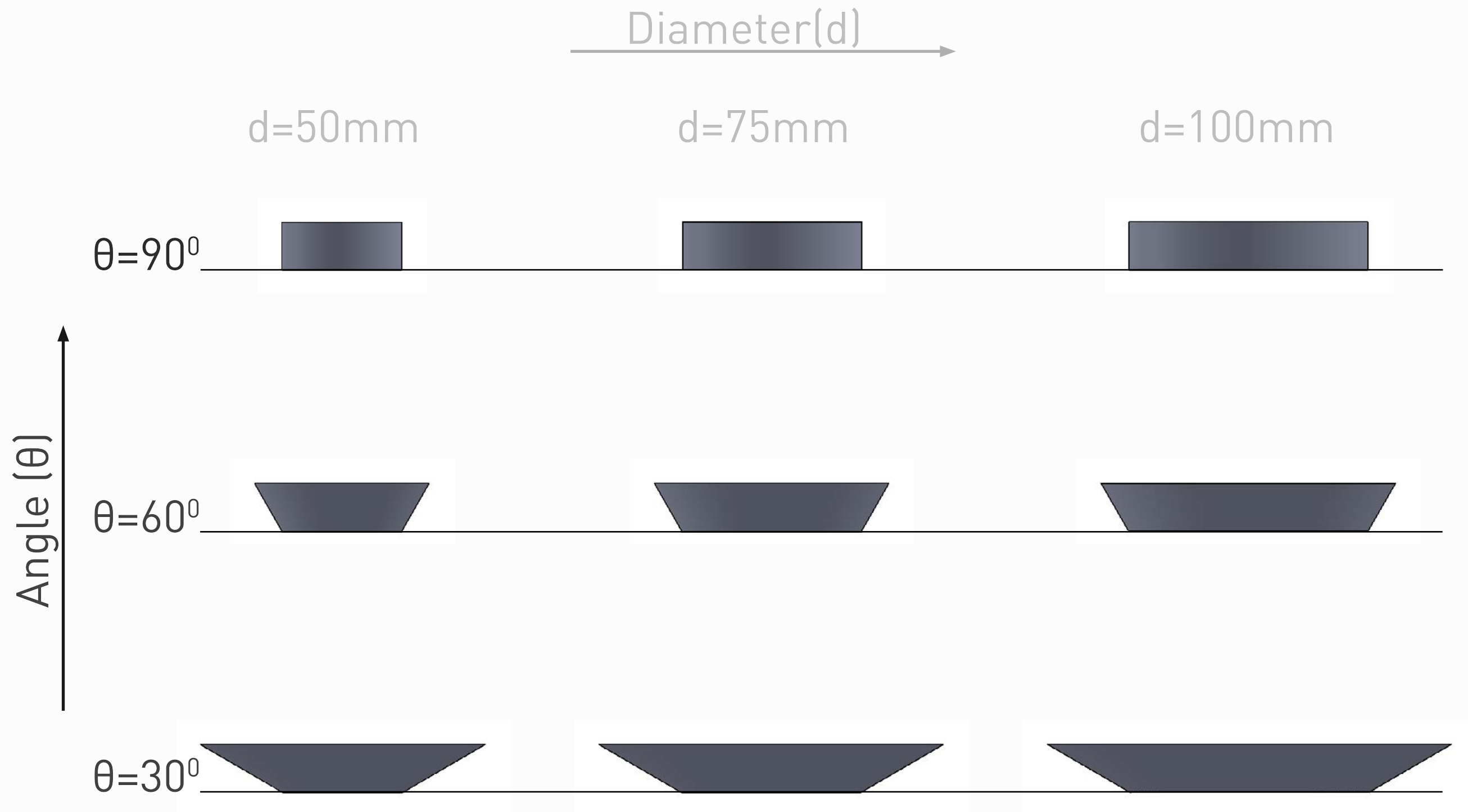
3 parameters

1. Angle
2. Diameter
3. Height

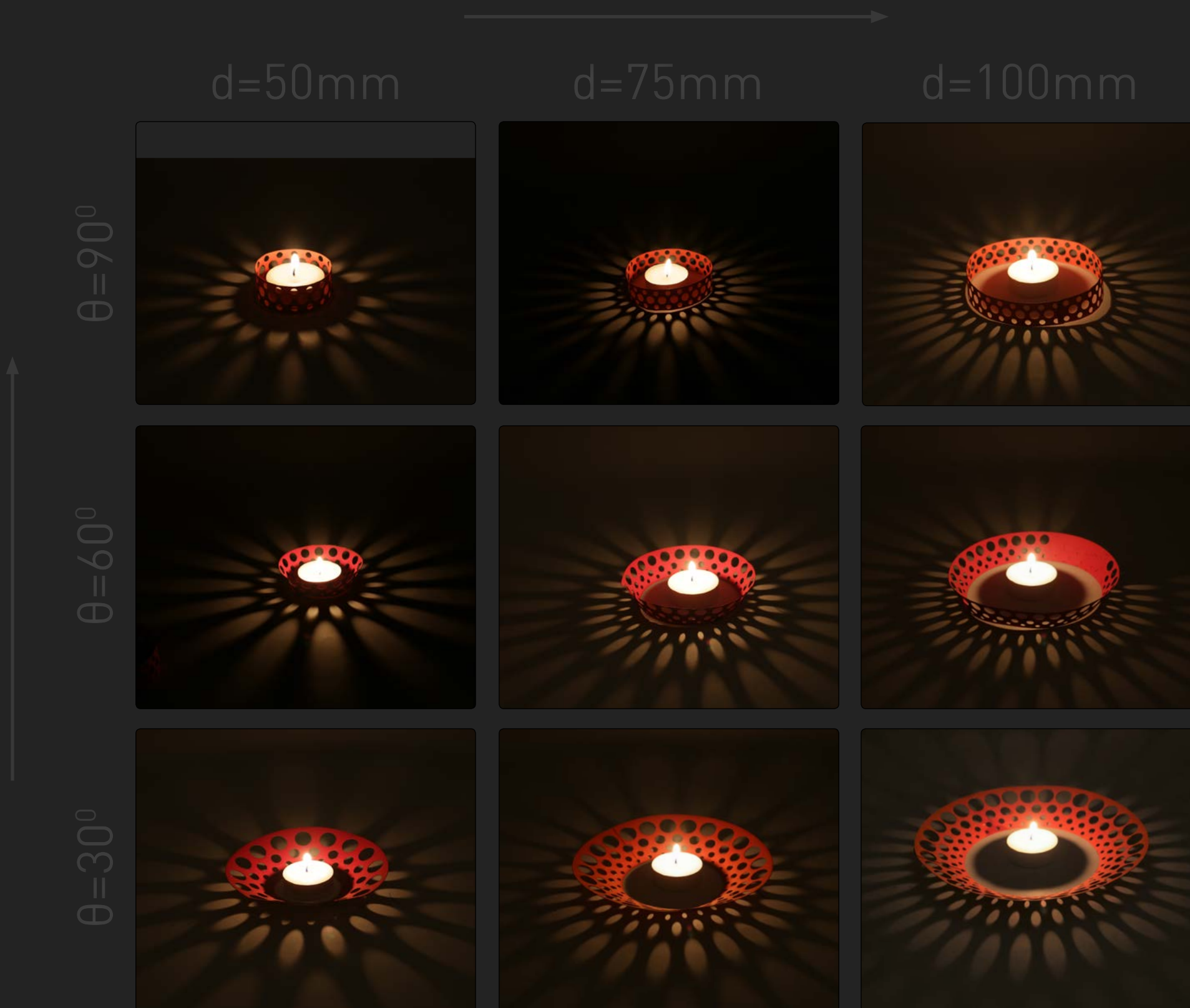
ϵ_3 / Variable = Radial distance



Ex 3/ Variable = Angle







$d=50\text{mm}$

$\theta=90^\circ$



$d=75\text{mm}$
 $\theta=90^\circ$

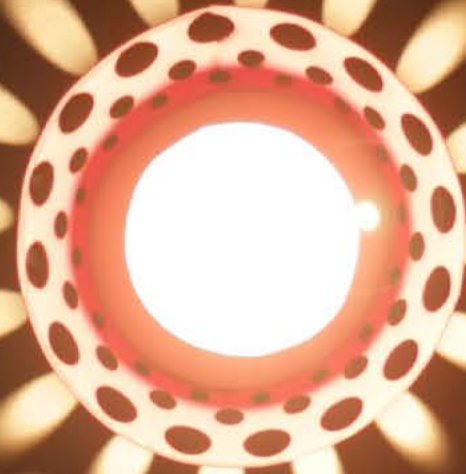


$d=100\text{mm}$
 $\theta=90^\circ$



$d=50\text{mm}$

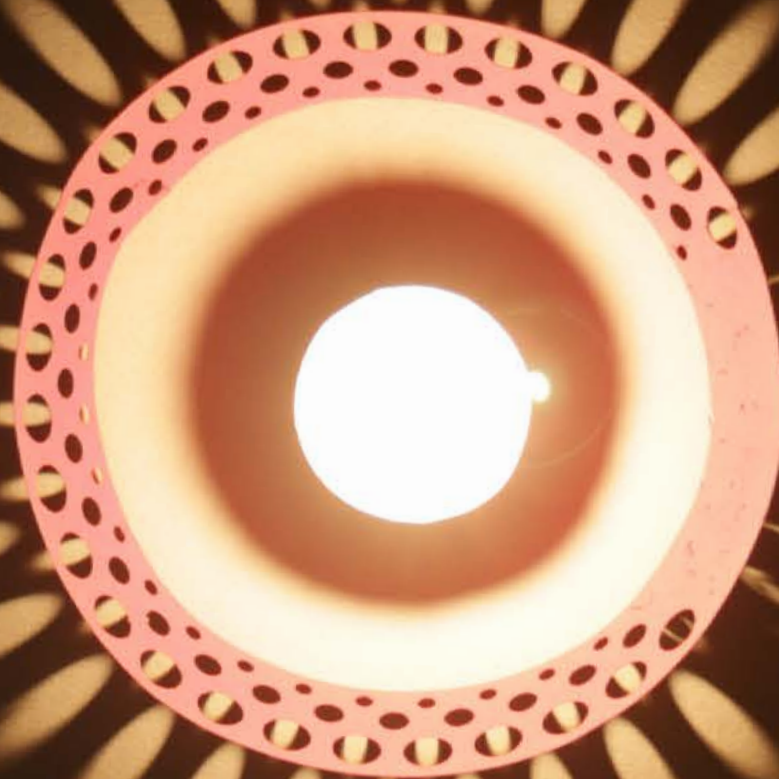
$\theta=60^\circ$

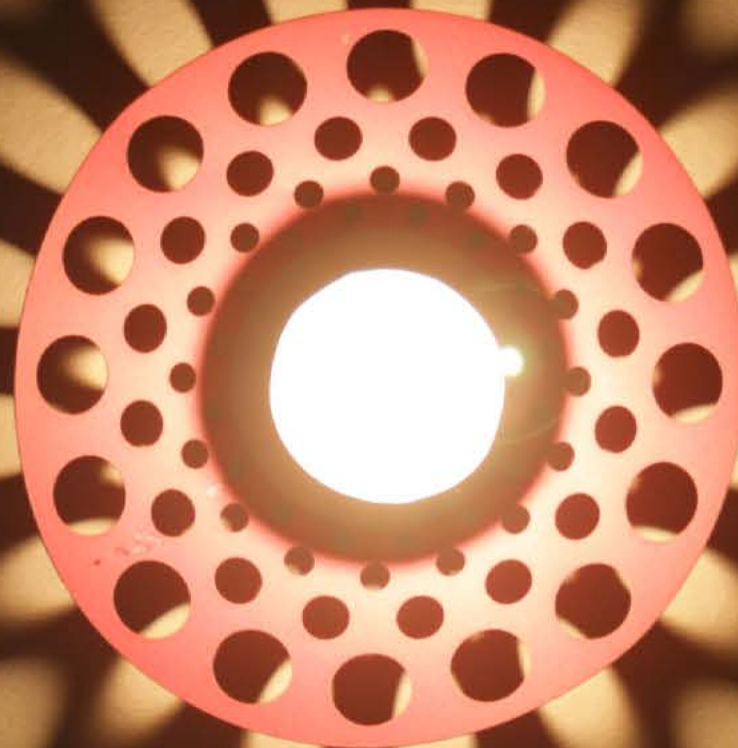


$d=75\text{mm}$
 $\theta=60^\circ$

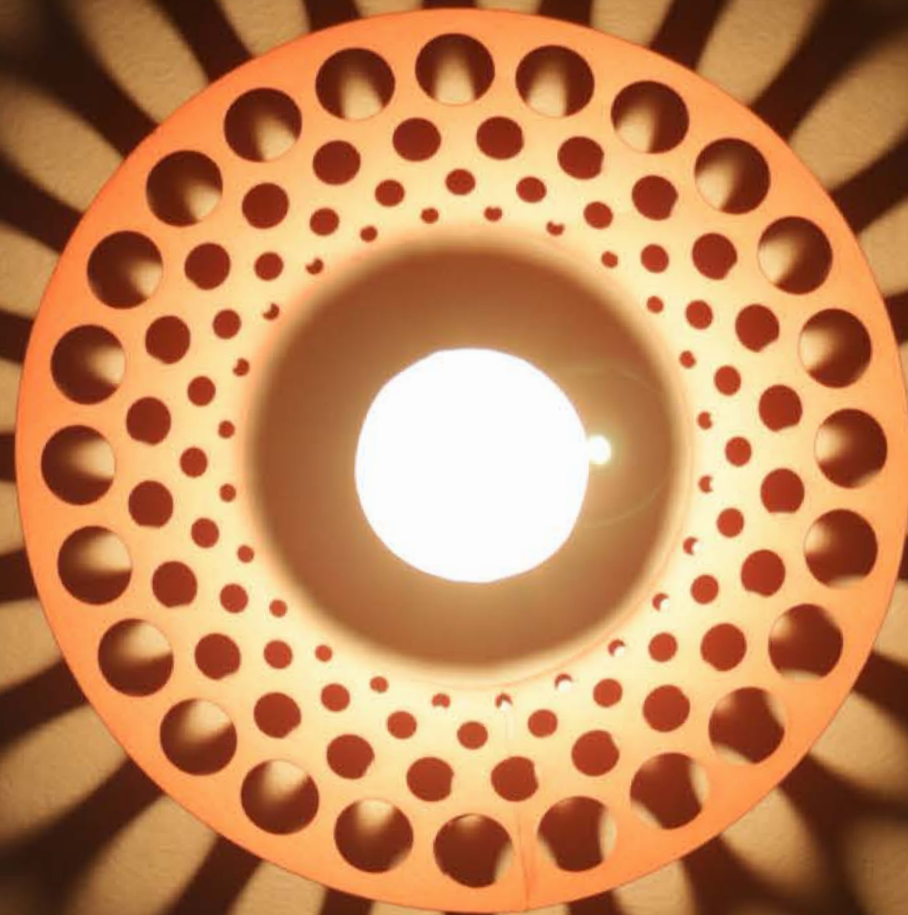


$d=100\text{mm}$
 $\theta=60^\circ$

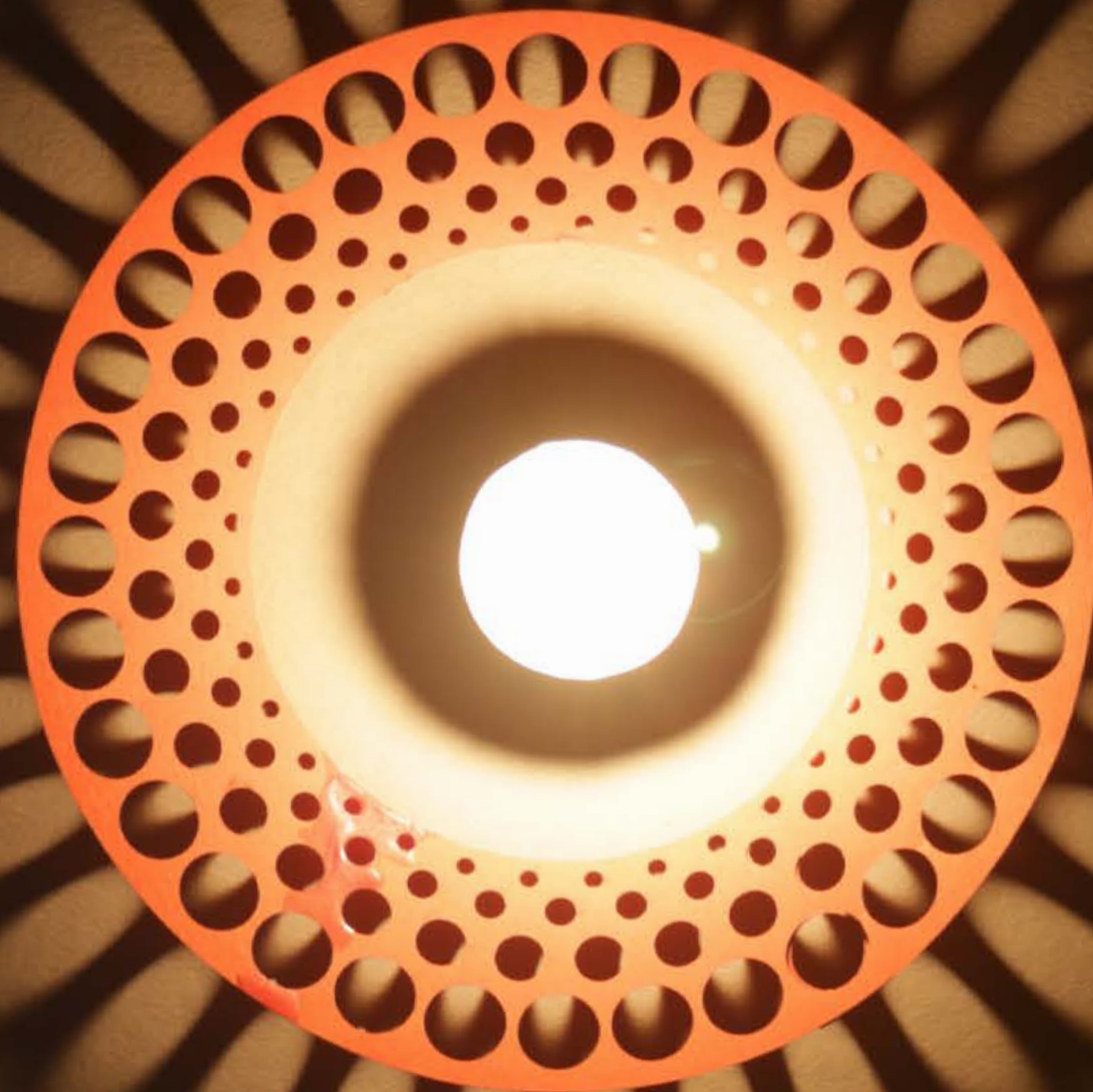


$\theta = 30^\circ$ 

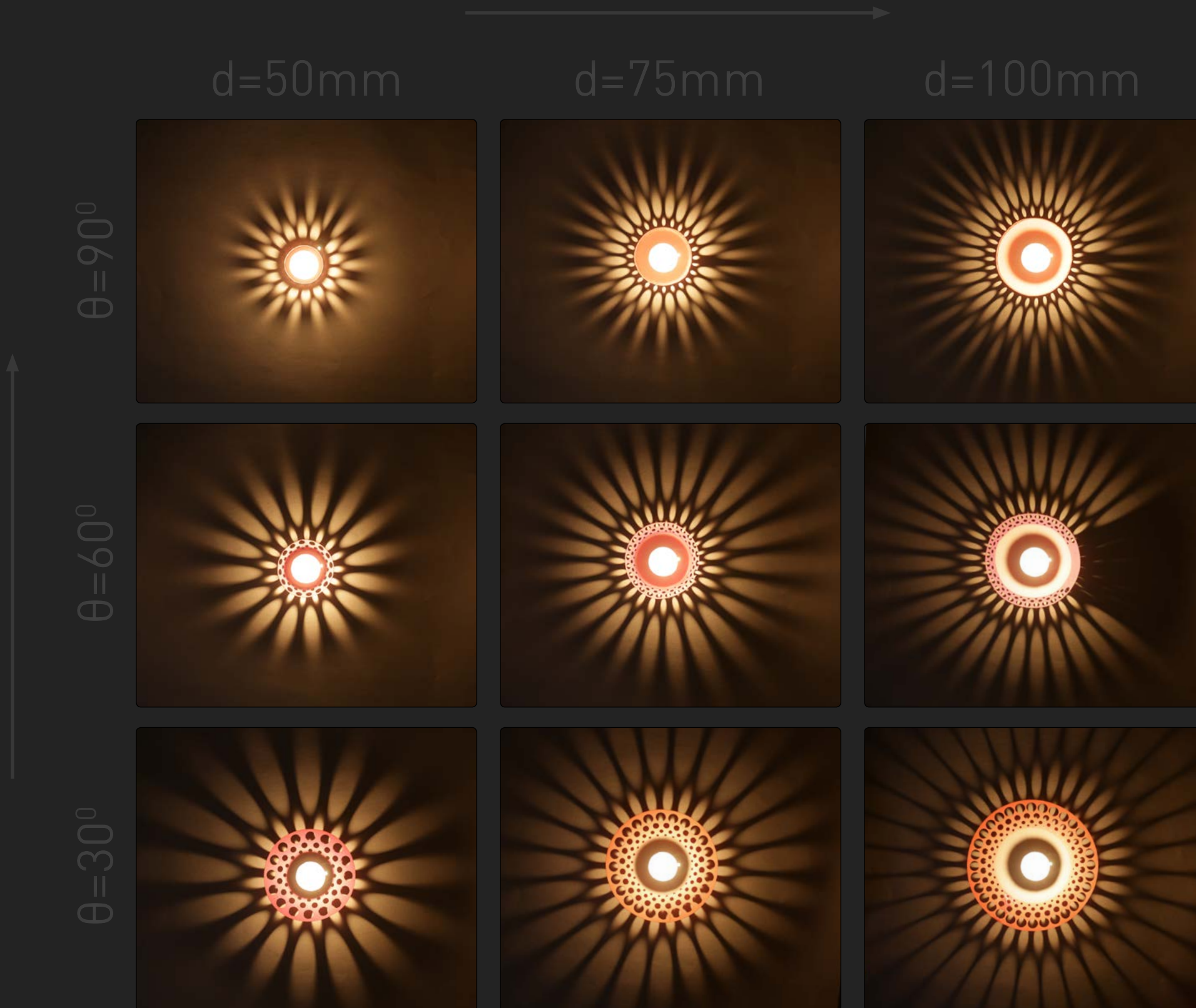
$d=75\text{mm}$
 $\theta=30^\circ$



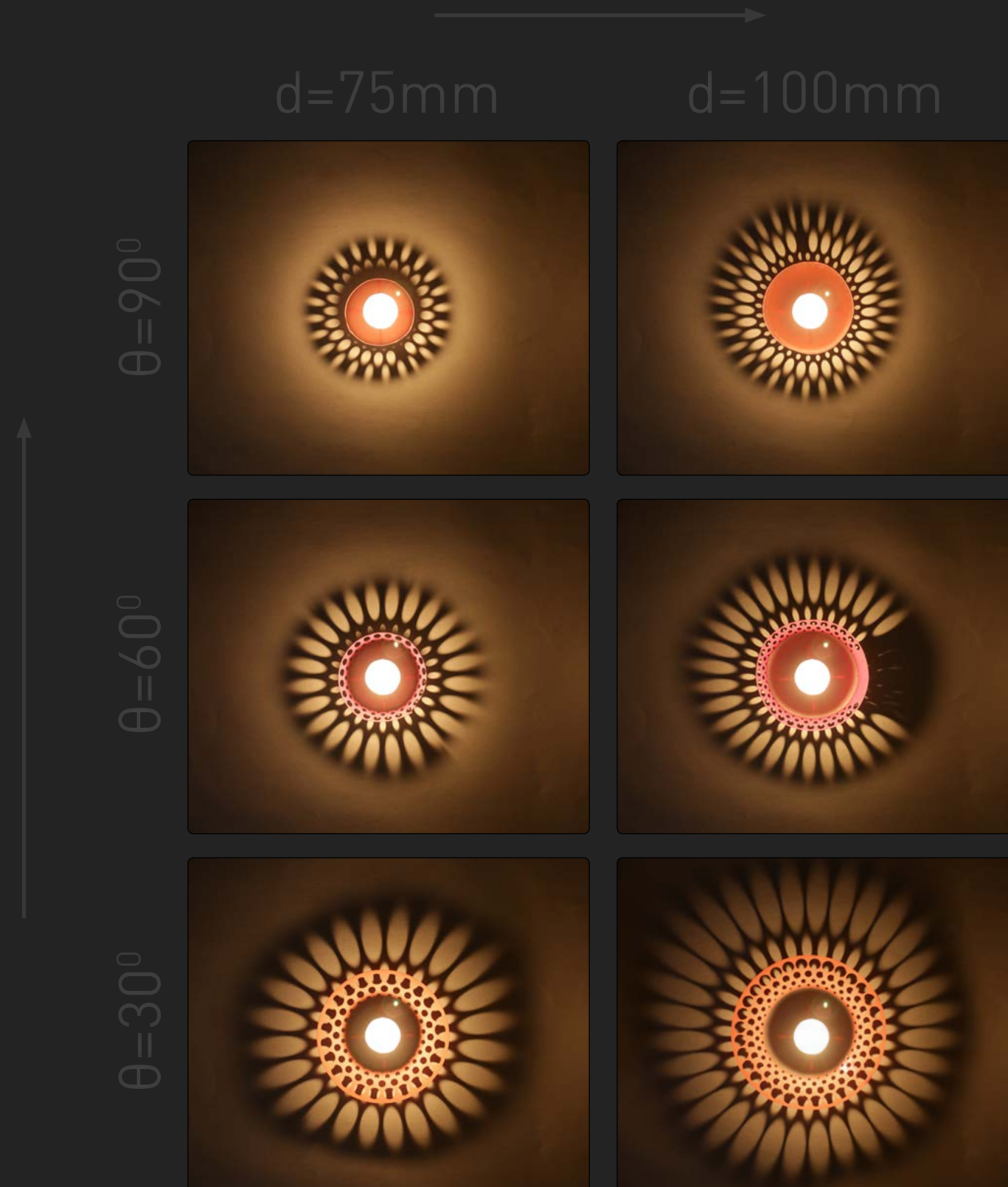
$d=100\text{mm}$
 $\theta=30^\circ$



$\varepsilon_3 / \text{height} = 0\text{mm}$



$\varepsilon_3 / \text{height} = 10\text{mm}$



$\varepsilon_3 / \text{height} = 20\text{mm}$

$d=100\text{mm}$

$\theta=90^\circ$



$\theta=60^\circ$



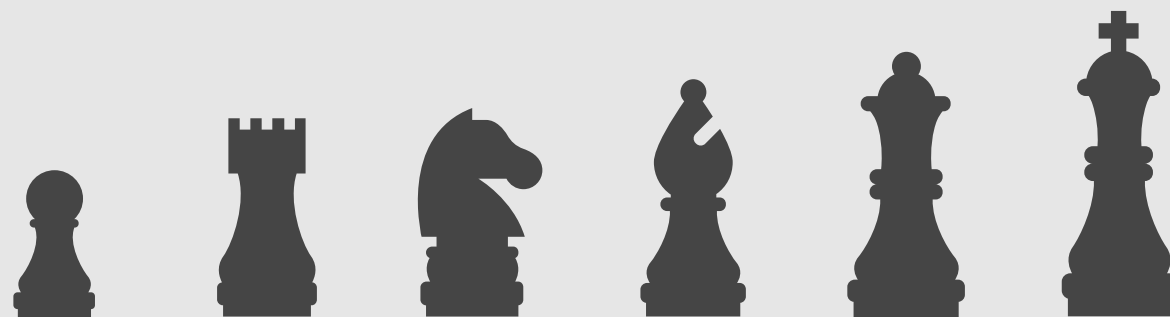
$\theta=30^\circ$



Design Concept

Chess

Chaturanga



D/ Chaturanga

1 Game

2 Players

64 squares

32 pieces

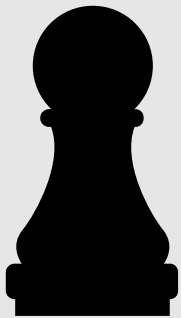


D/ Chaturanga

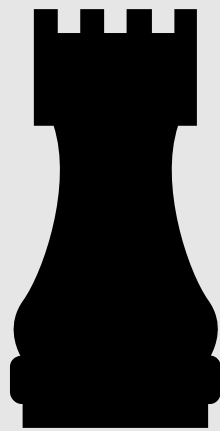
6 unique pieces



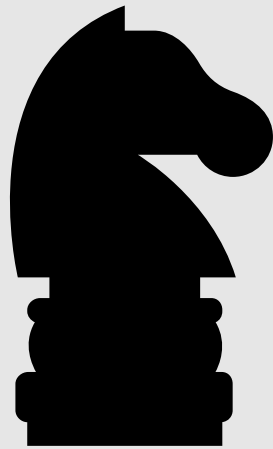
D/ Chess piece



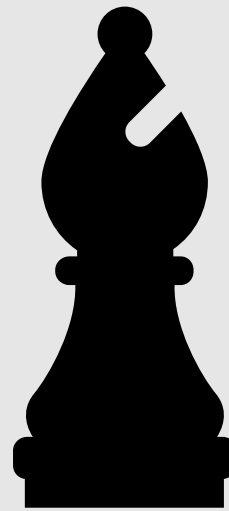
Pawn
Soldier



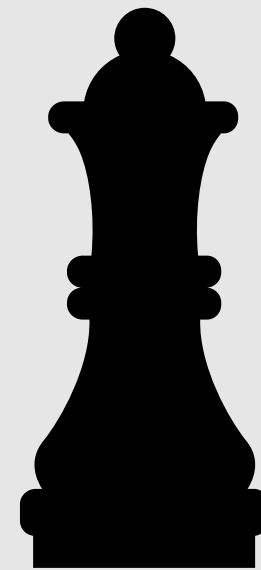
Rook
Elephant



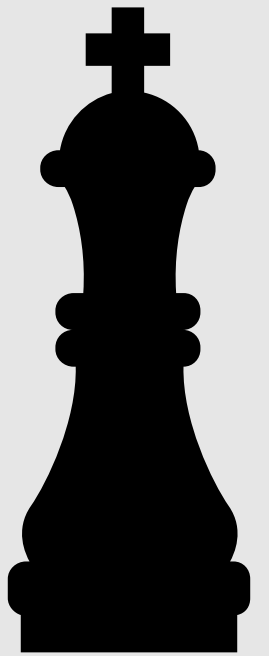
Knight
Horse



Bishop
Camel

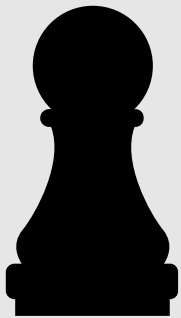


Queen
Minister

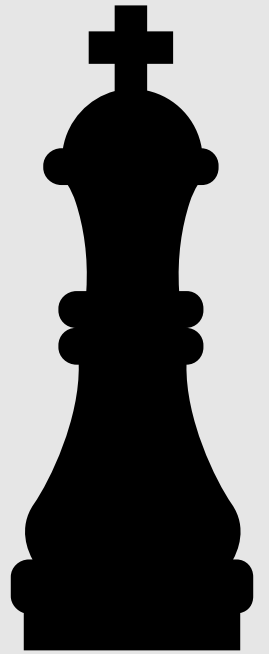
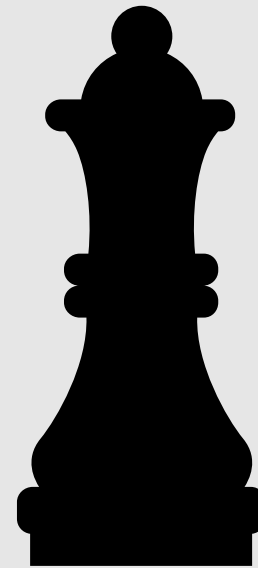
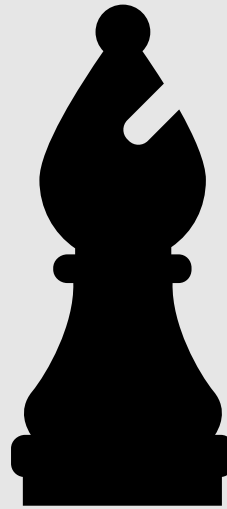
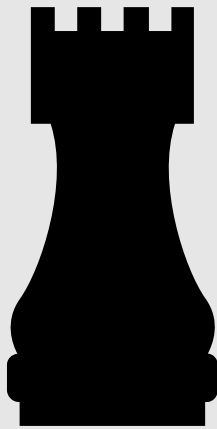


King
King

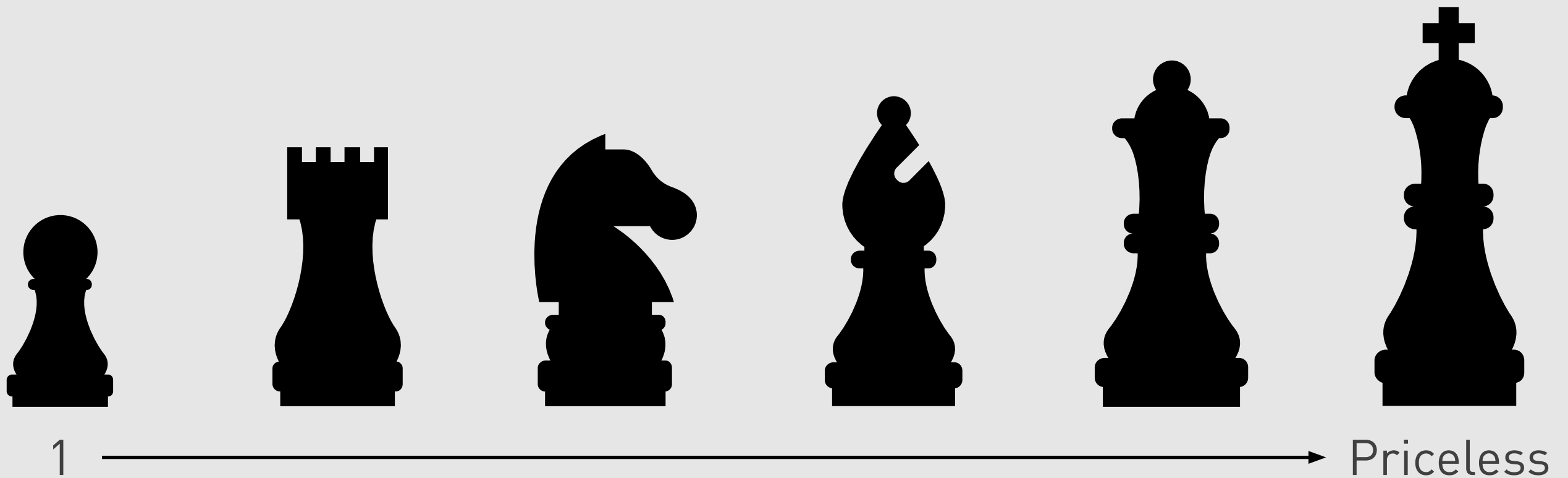
D/ Chess piece relative value



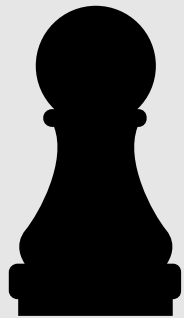
1



D/ Chess piece relative value



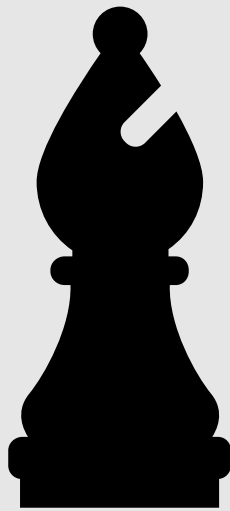
D/ Chess piece relative value



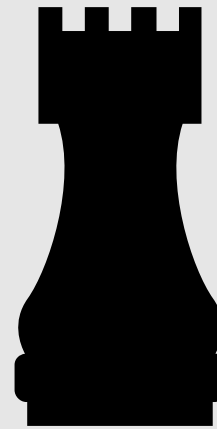
1



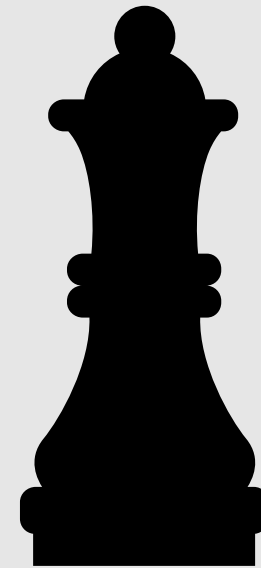
3



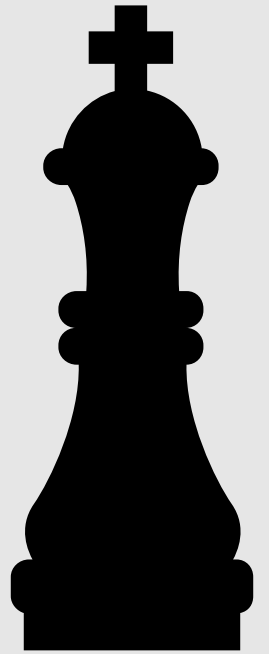
3



5



9



Priceless

Design development

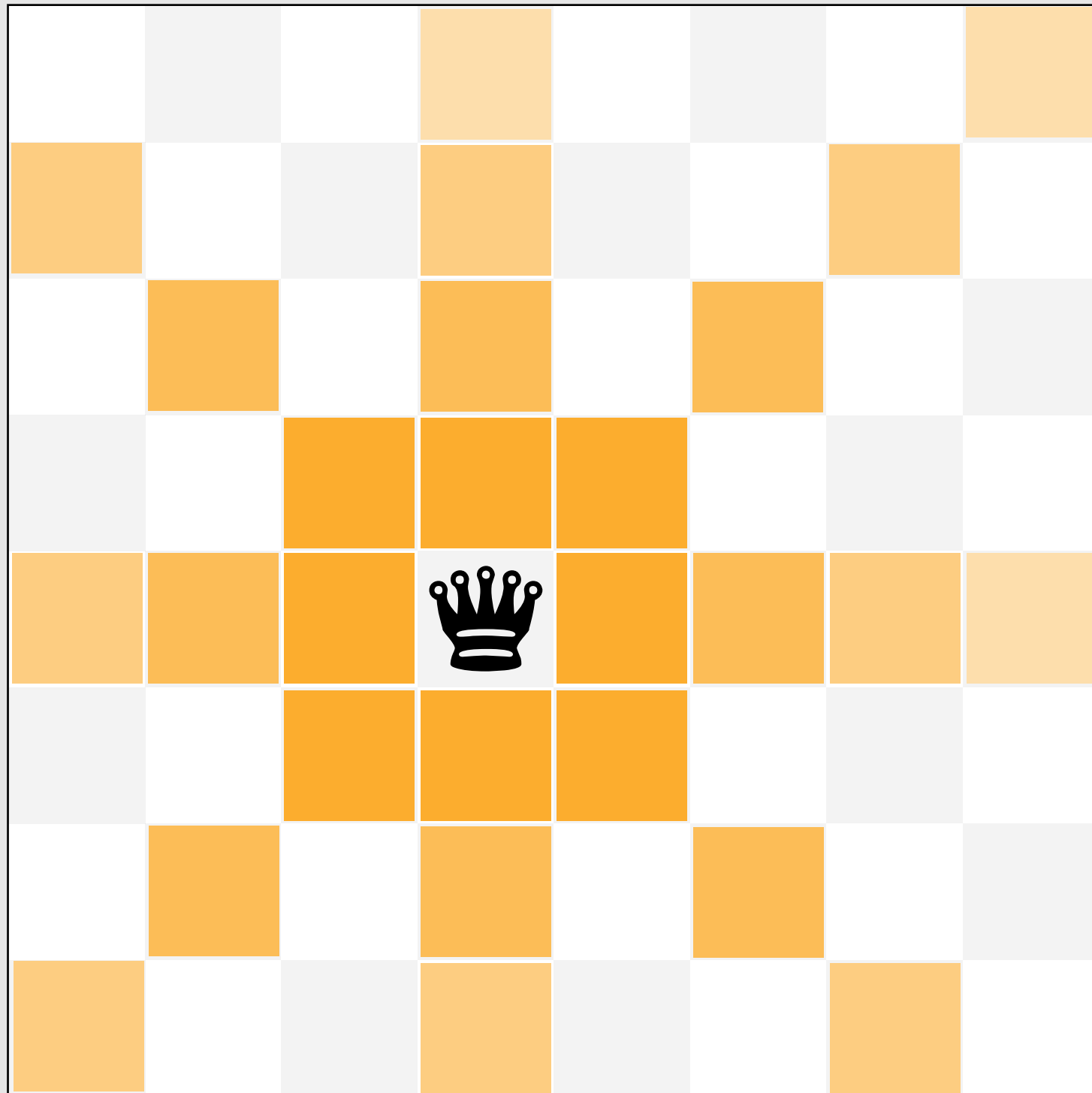
1. Patterns

2. Forms

3. Motifs

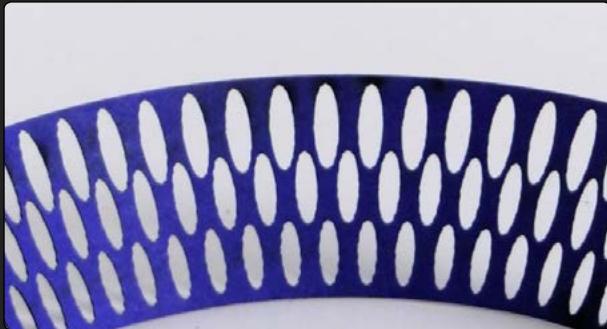
1. Patterns

D/ Movement of Queen





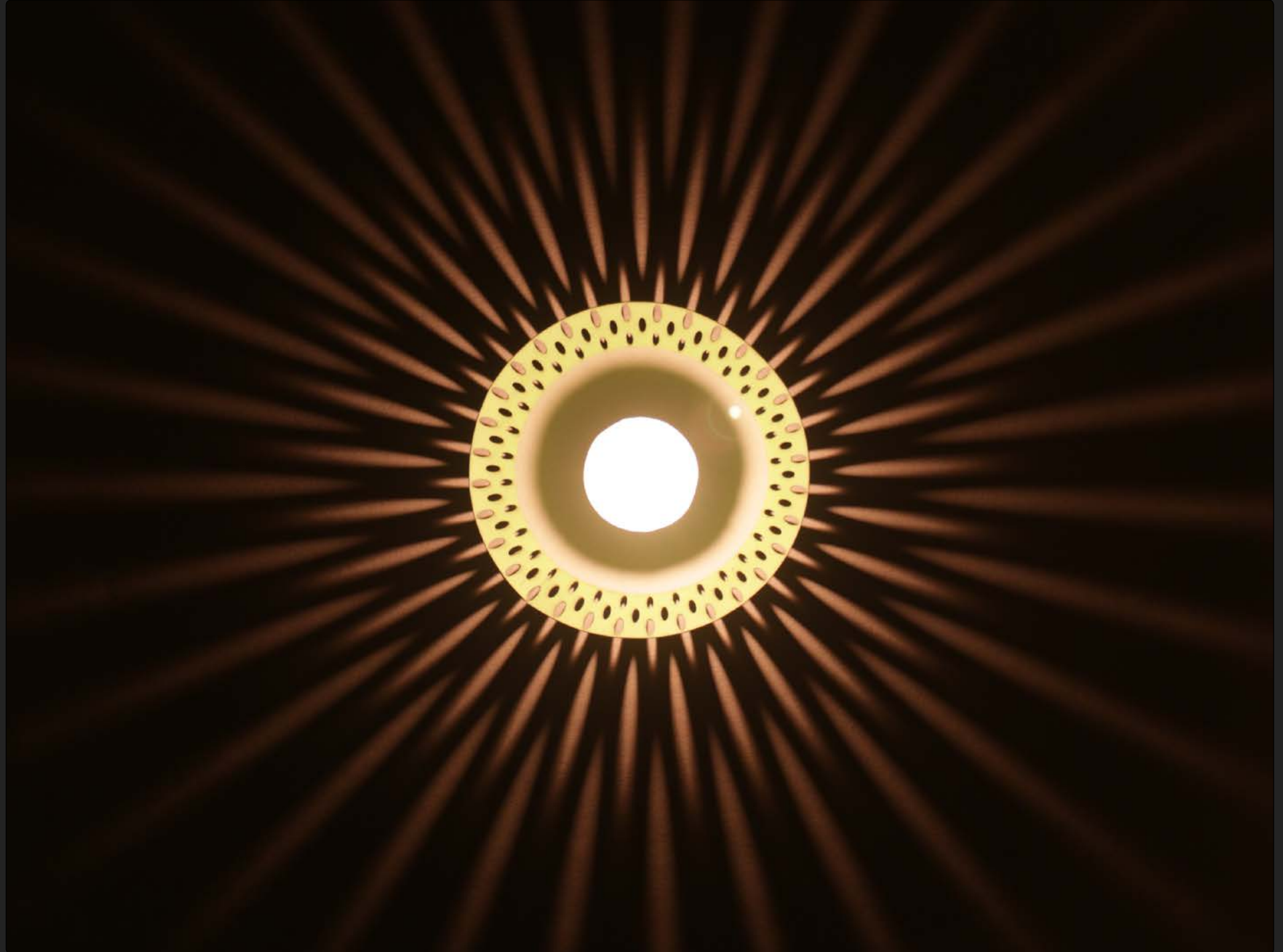
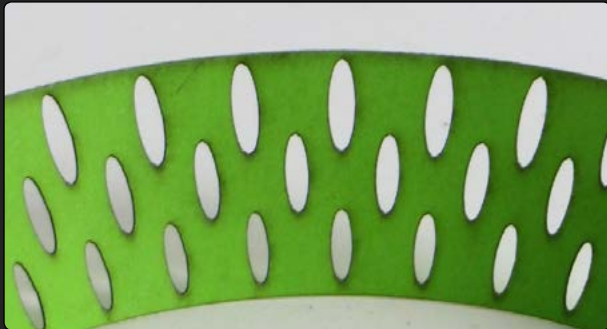
D / Queen / 1



D / Queen / 2



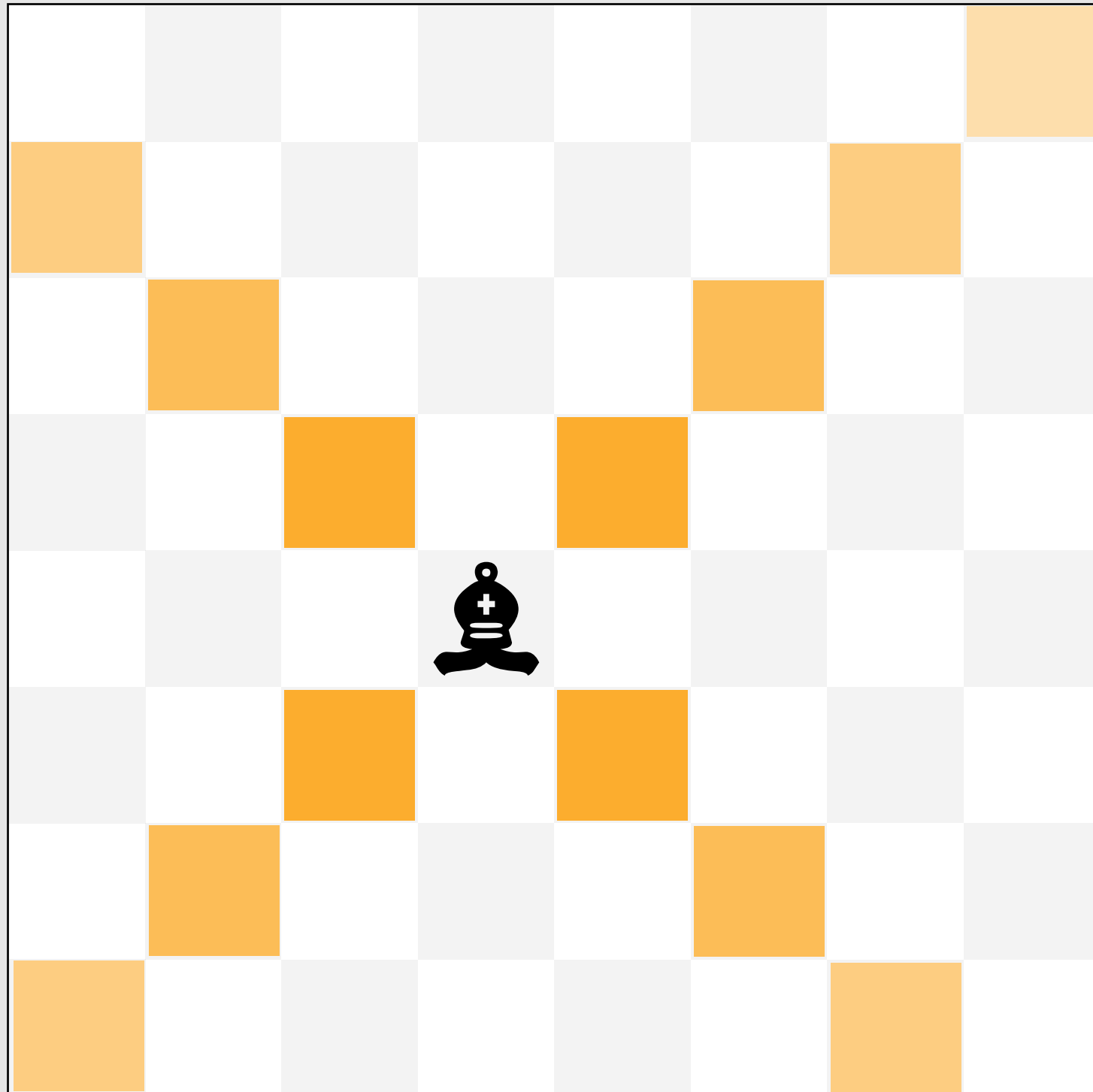
D / Queen / 3



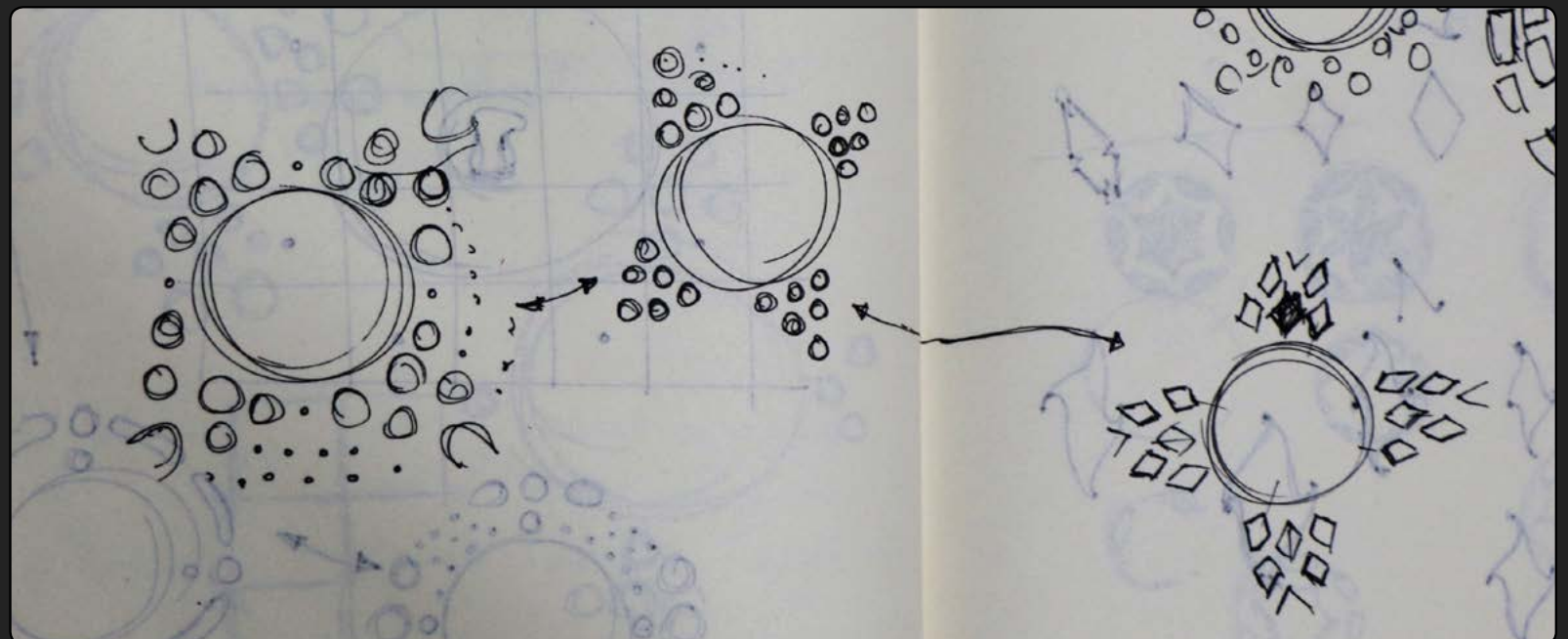
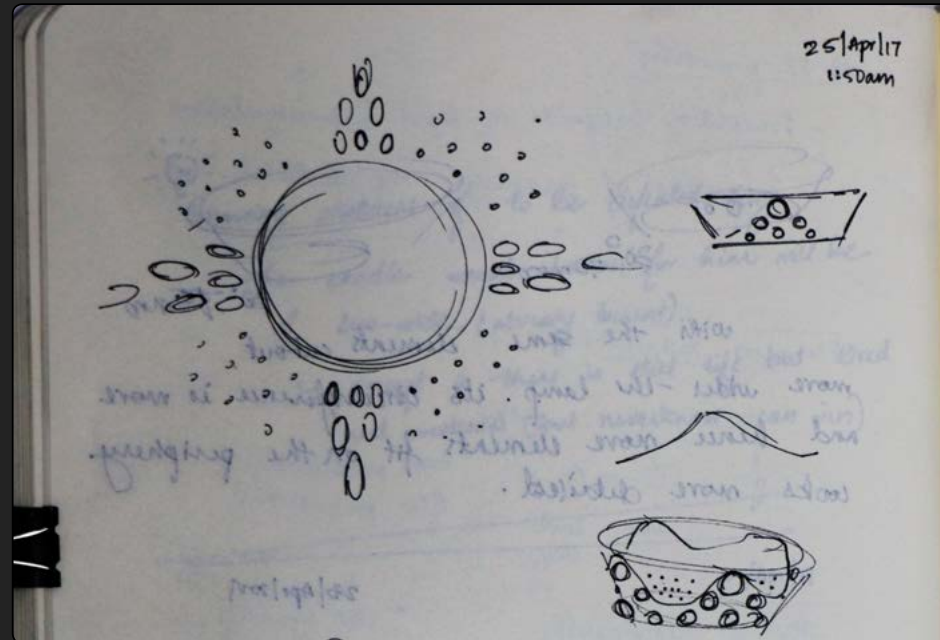
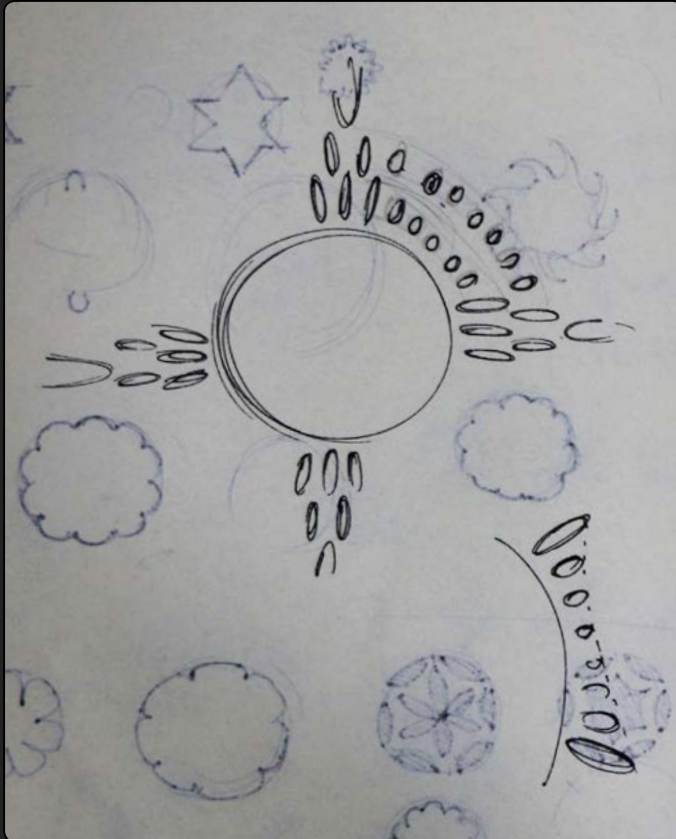
D / Queen / 4

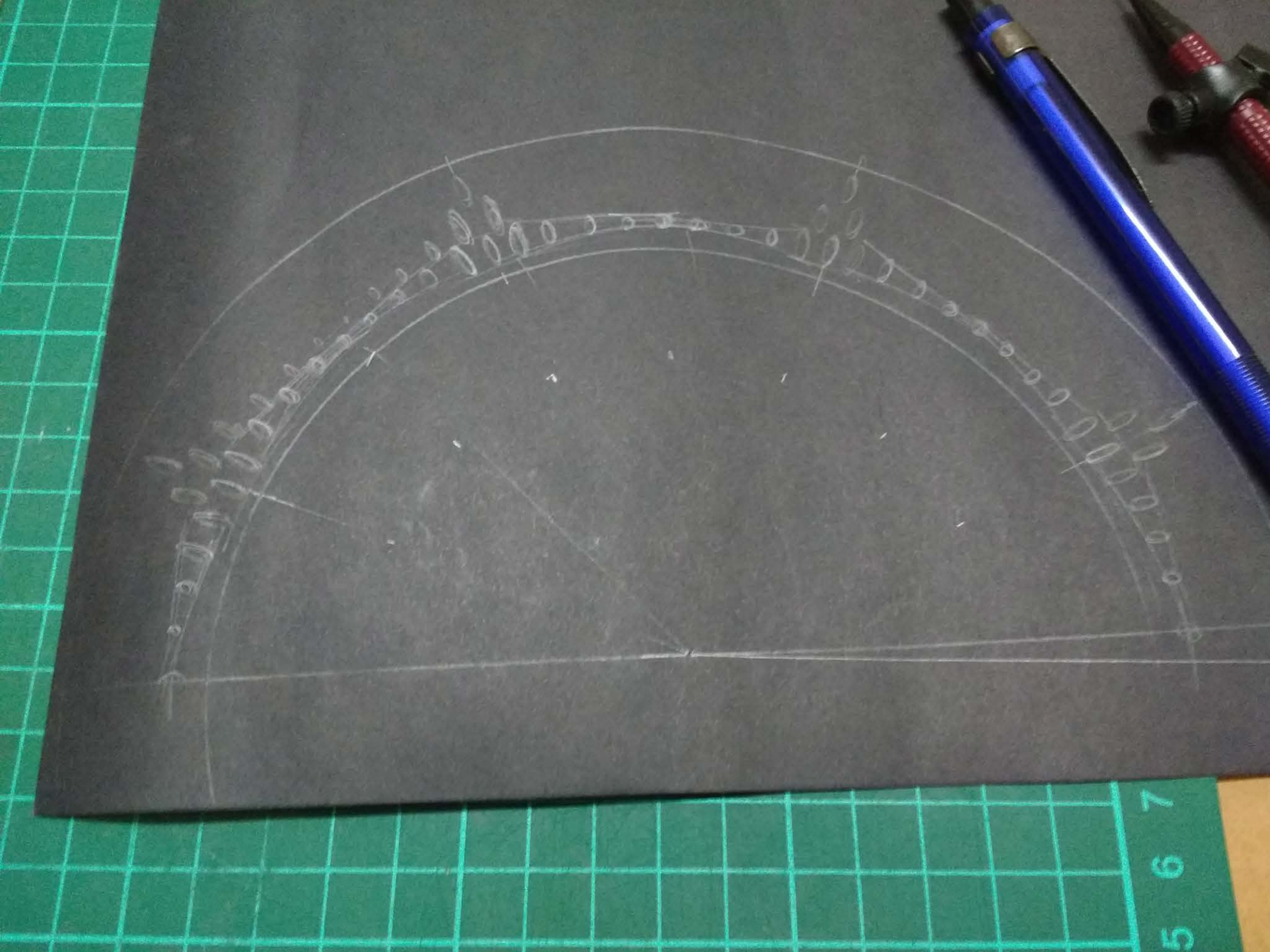


D / Movement of Camel

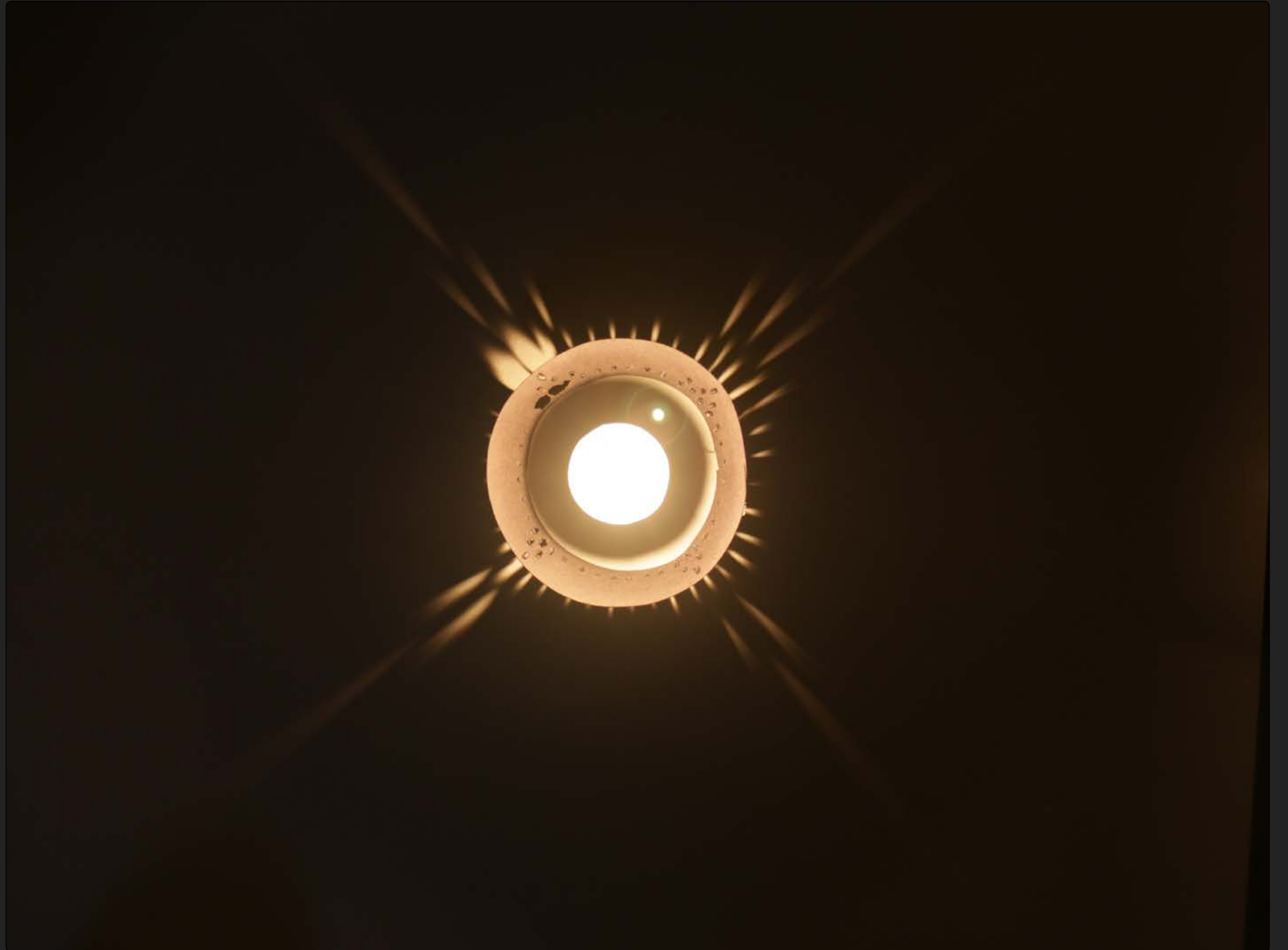


D/ Camel/ Ideation of patterns

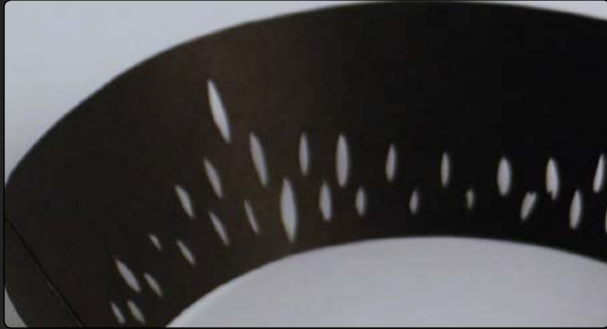
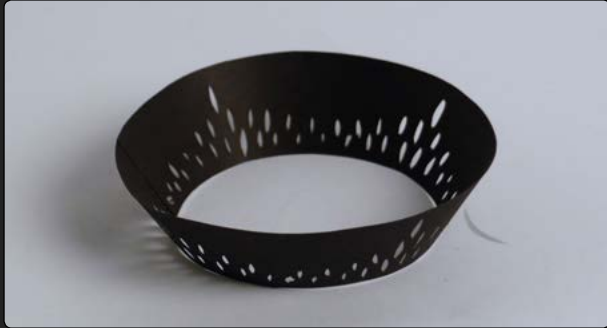




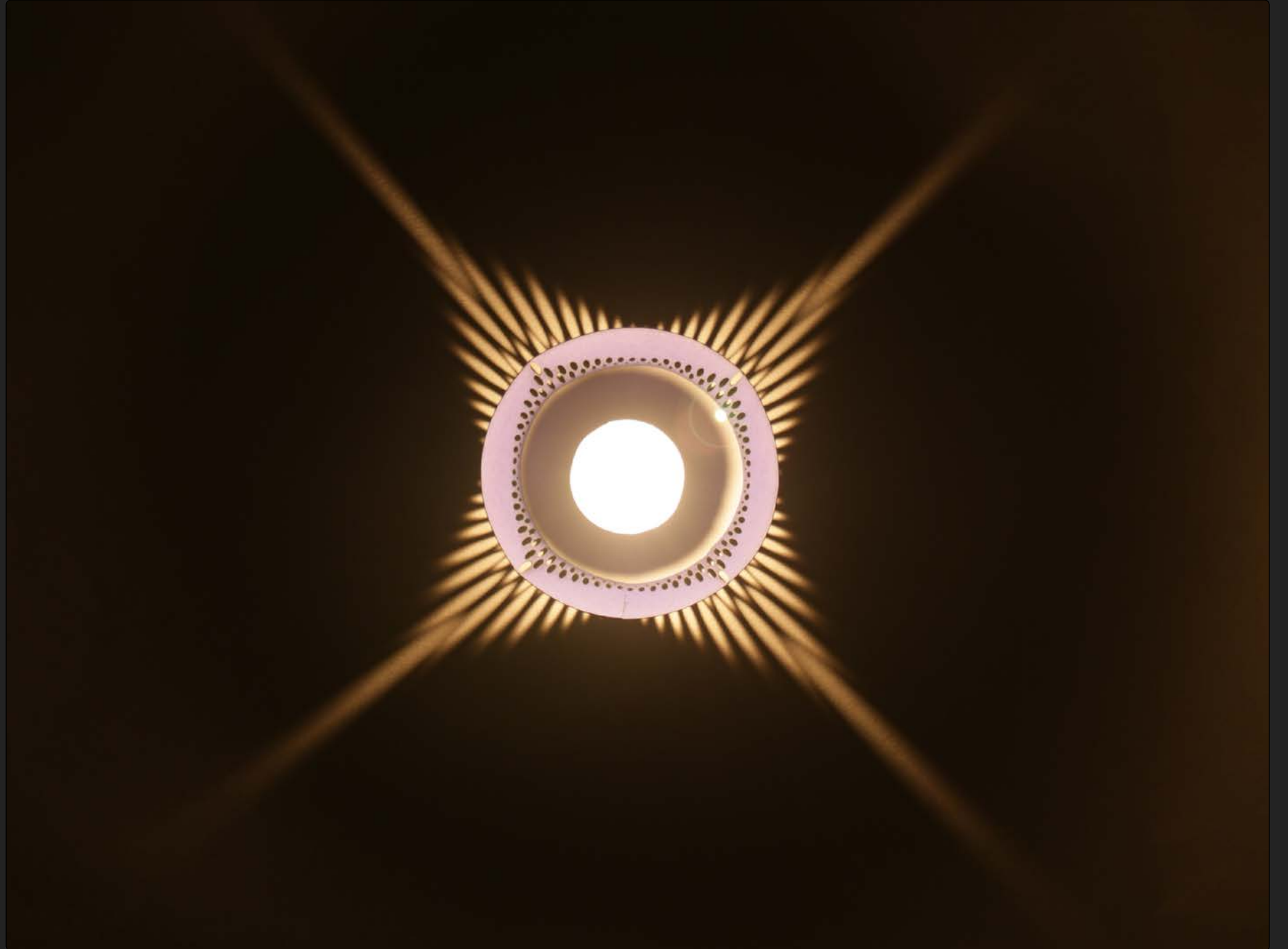
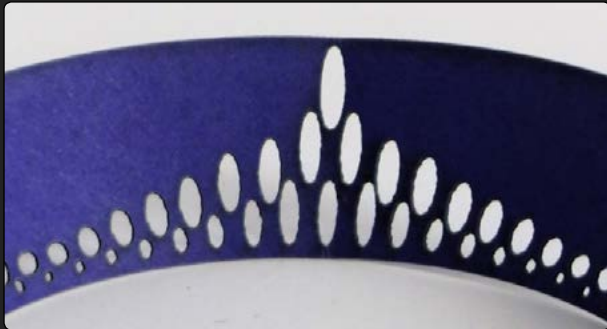
D/ Camel/ 1



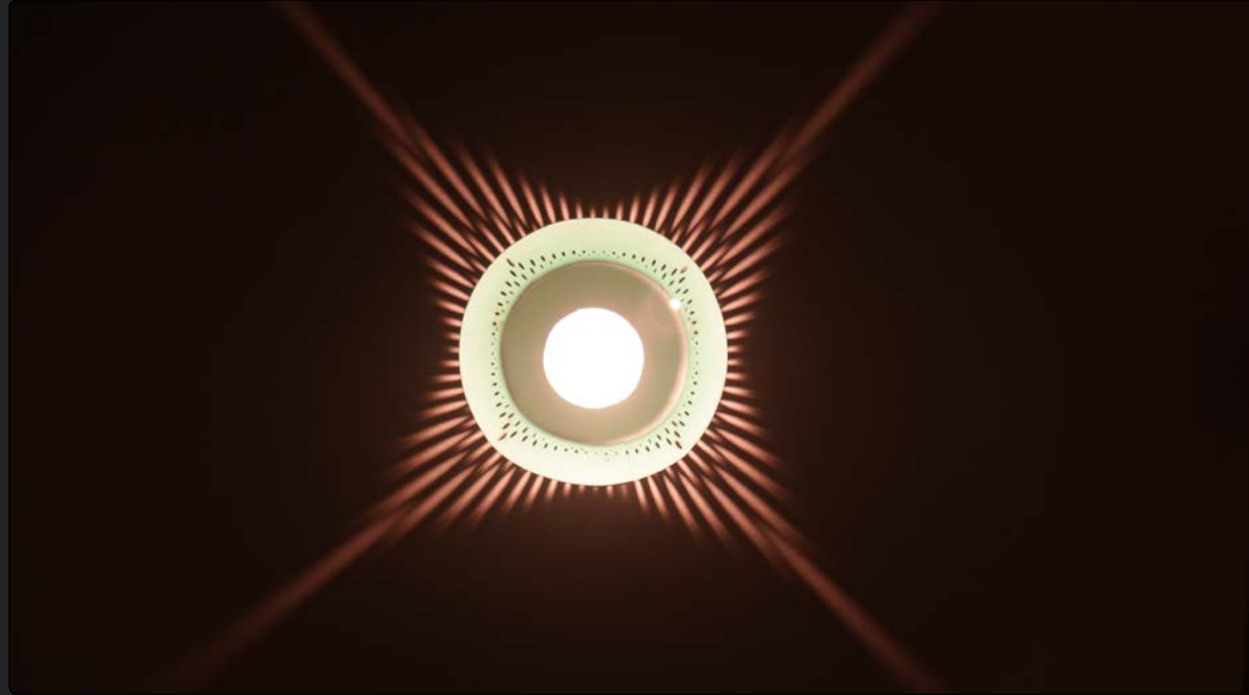
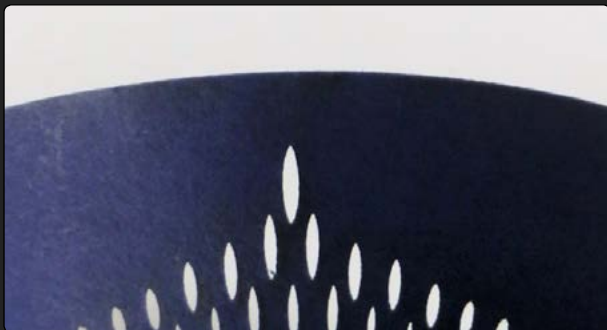
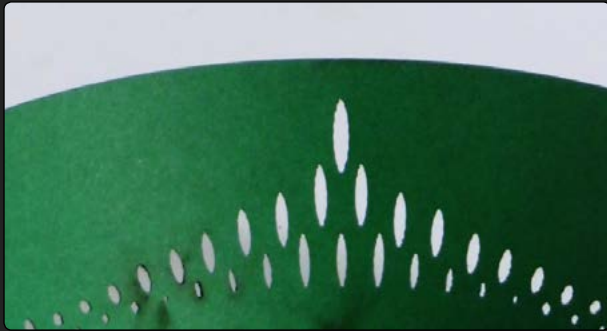
D/ Camel/ 2



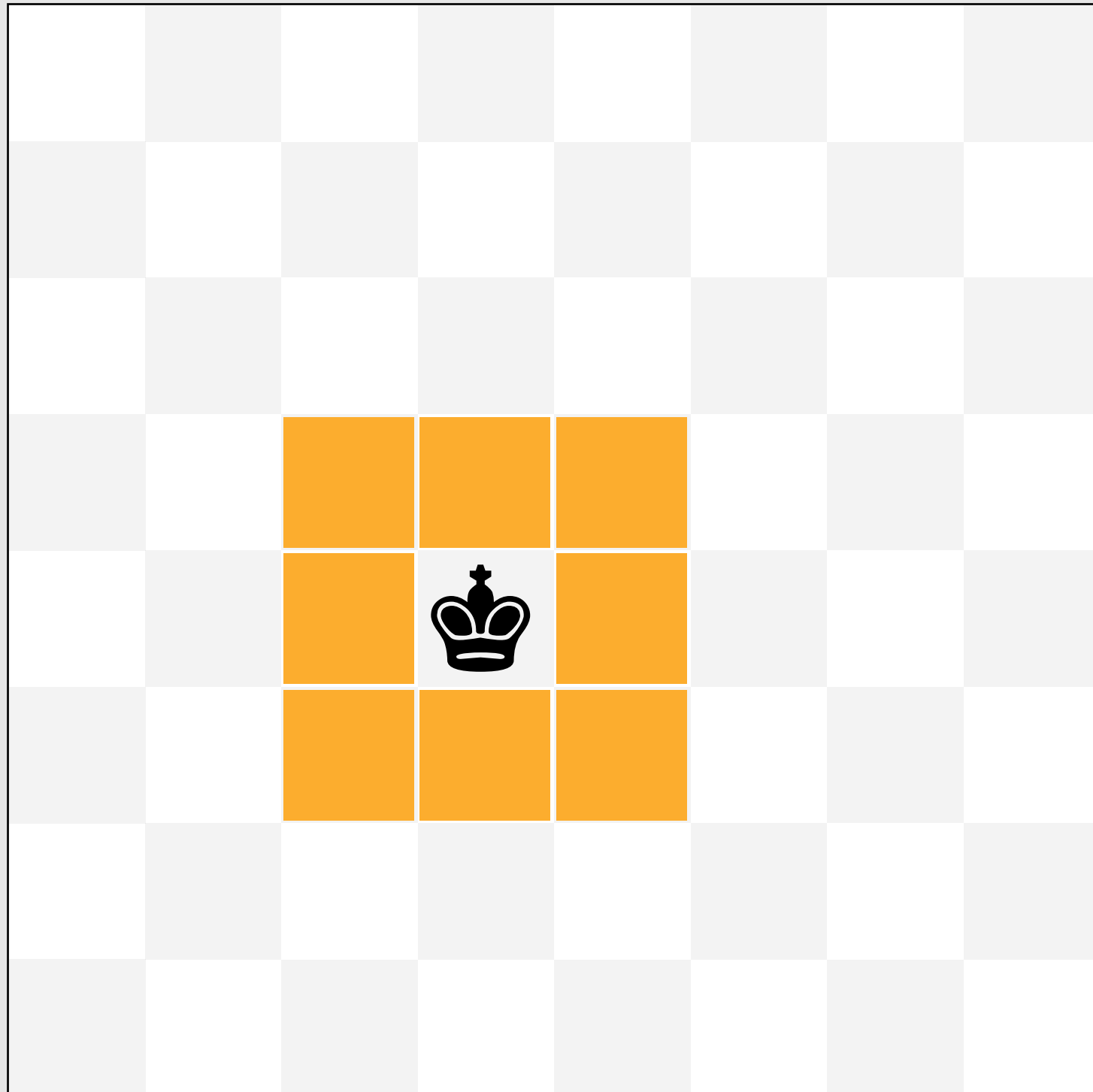
D/ Camel/ 3



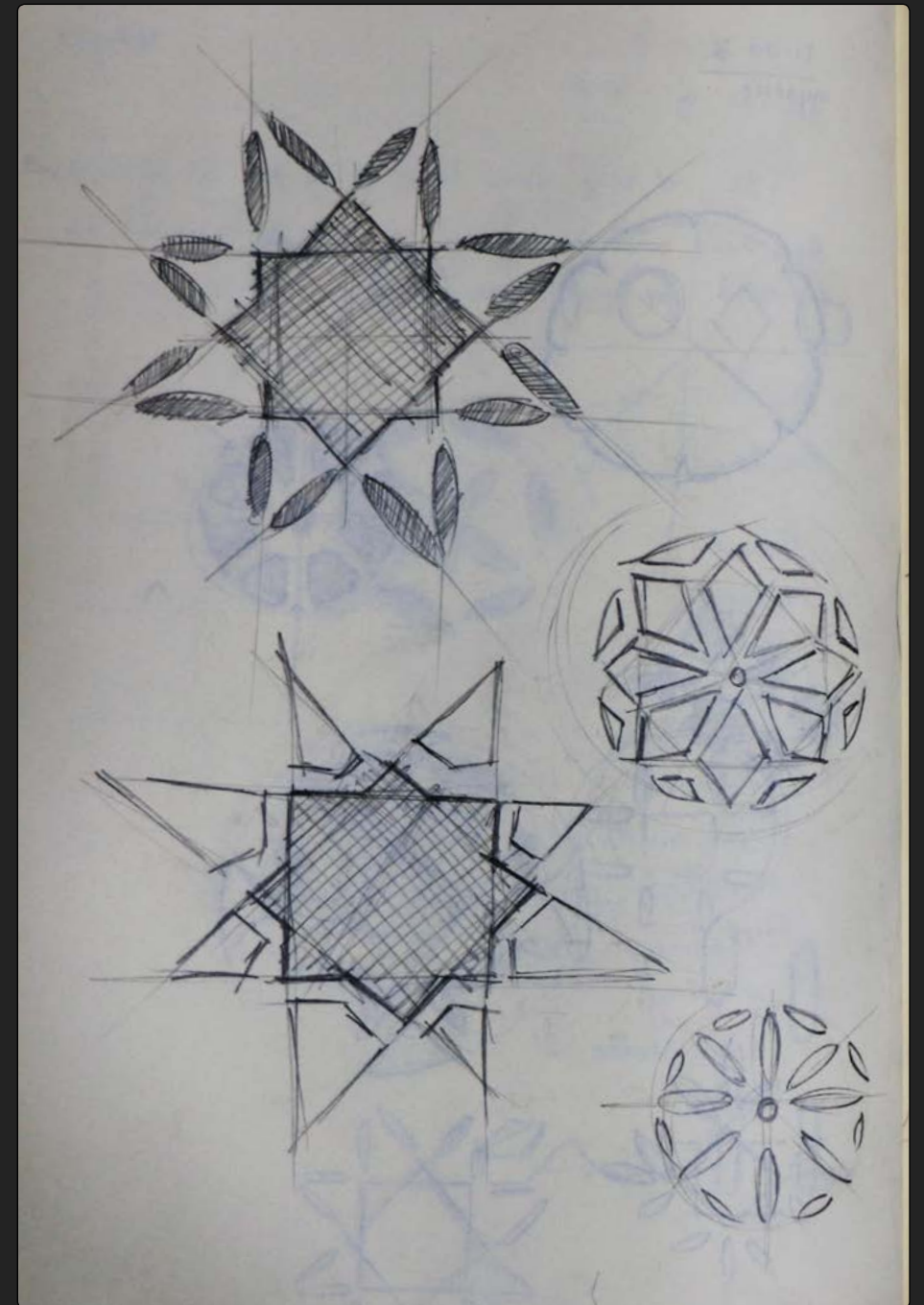
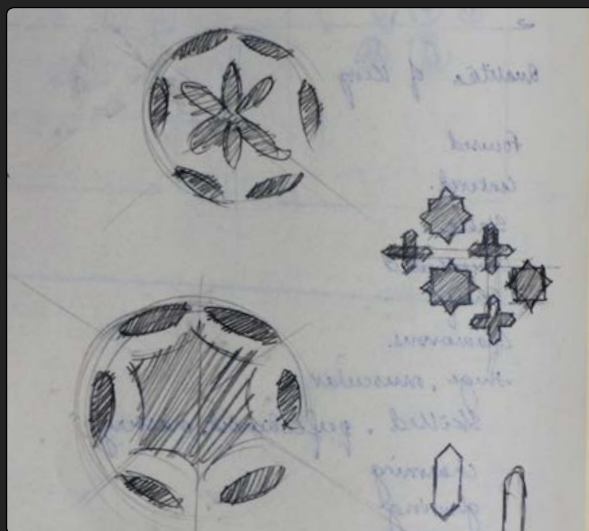
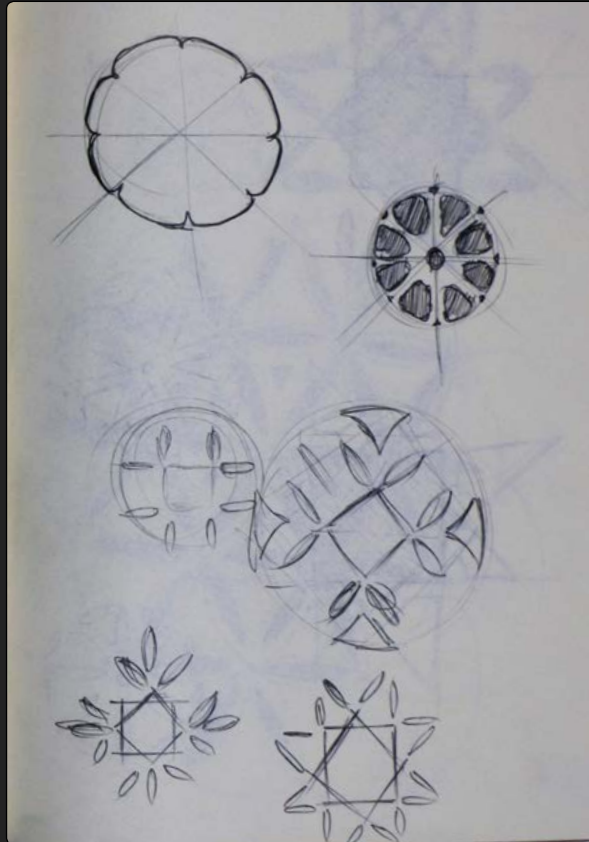
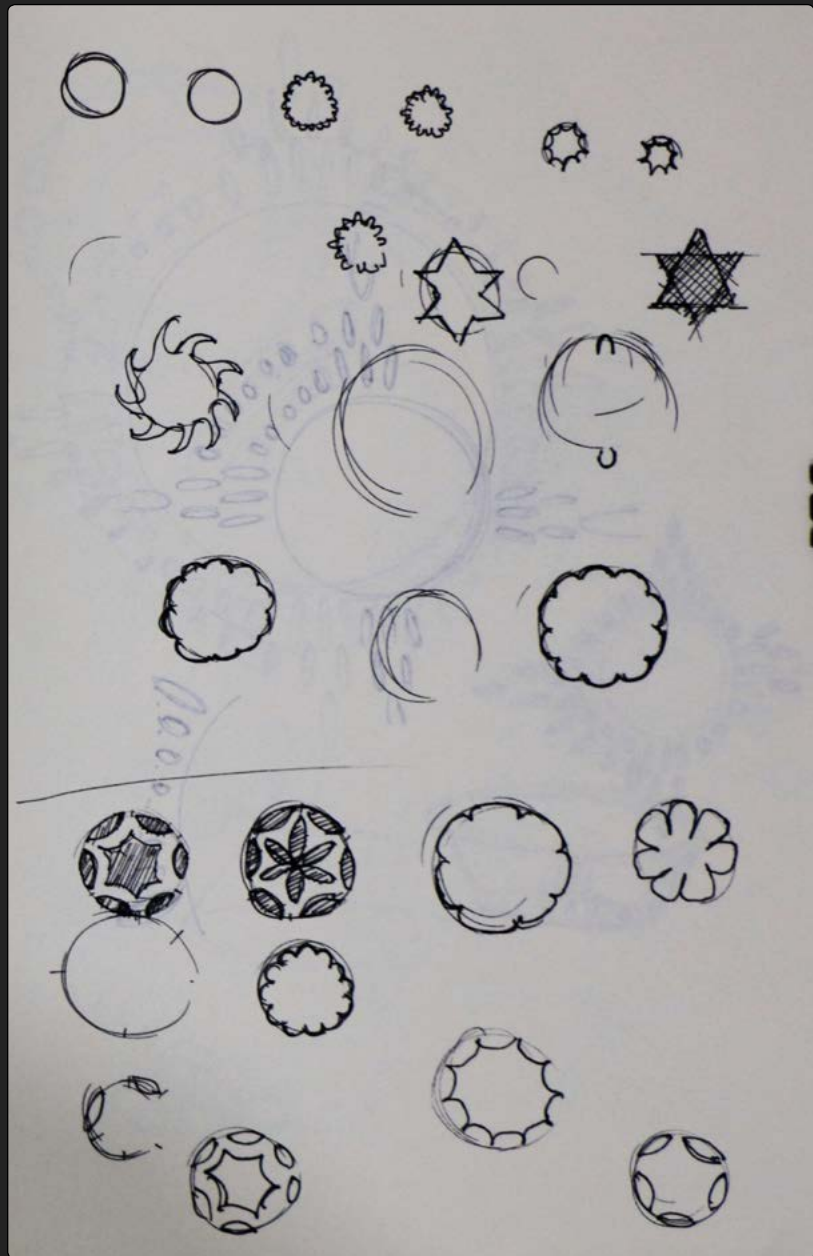
D / Camel / 4, 5



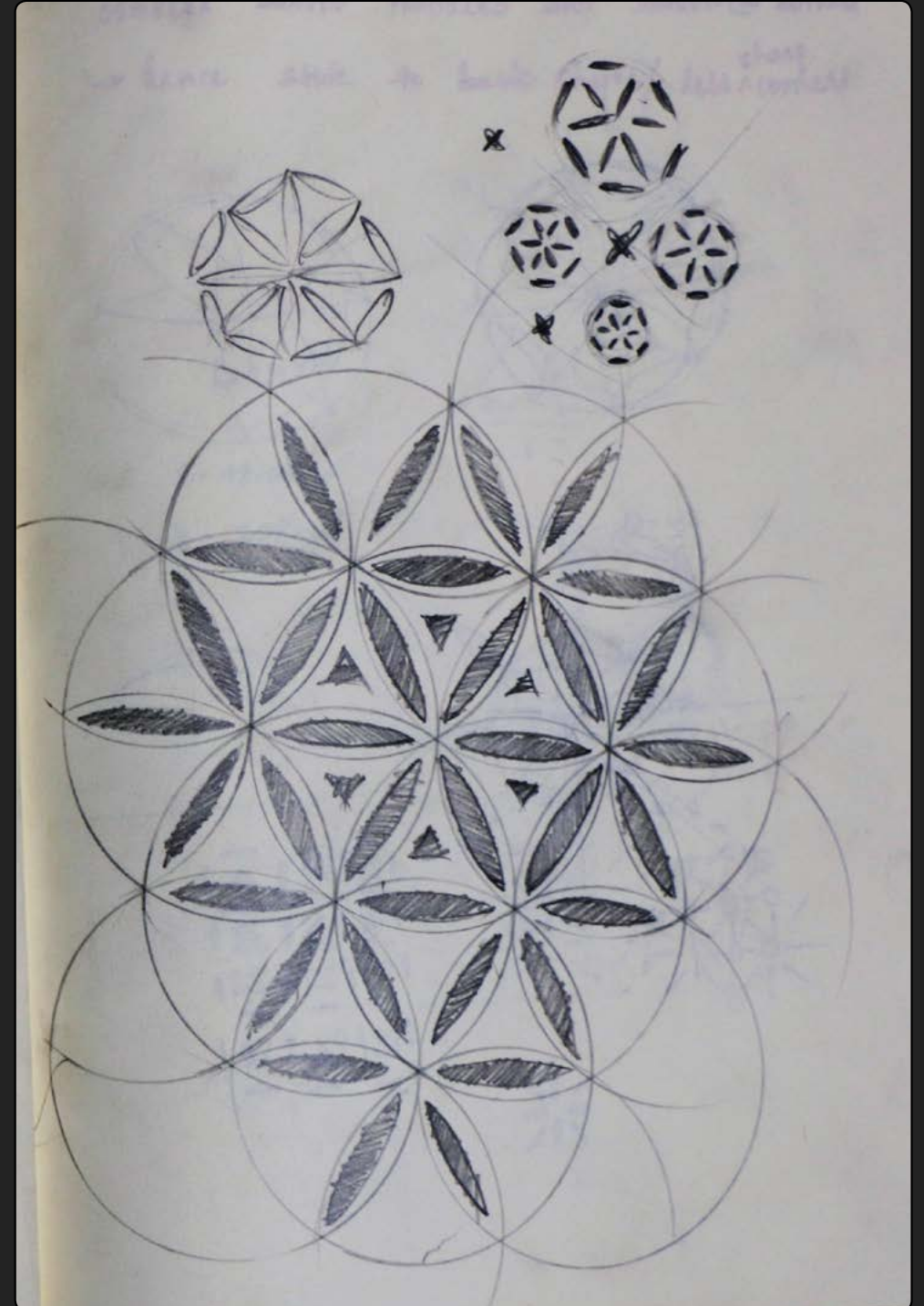
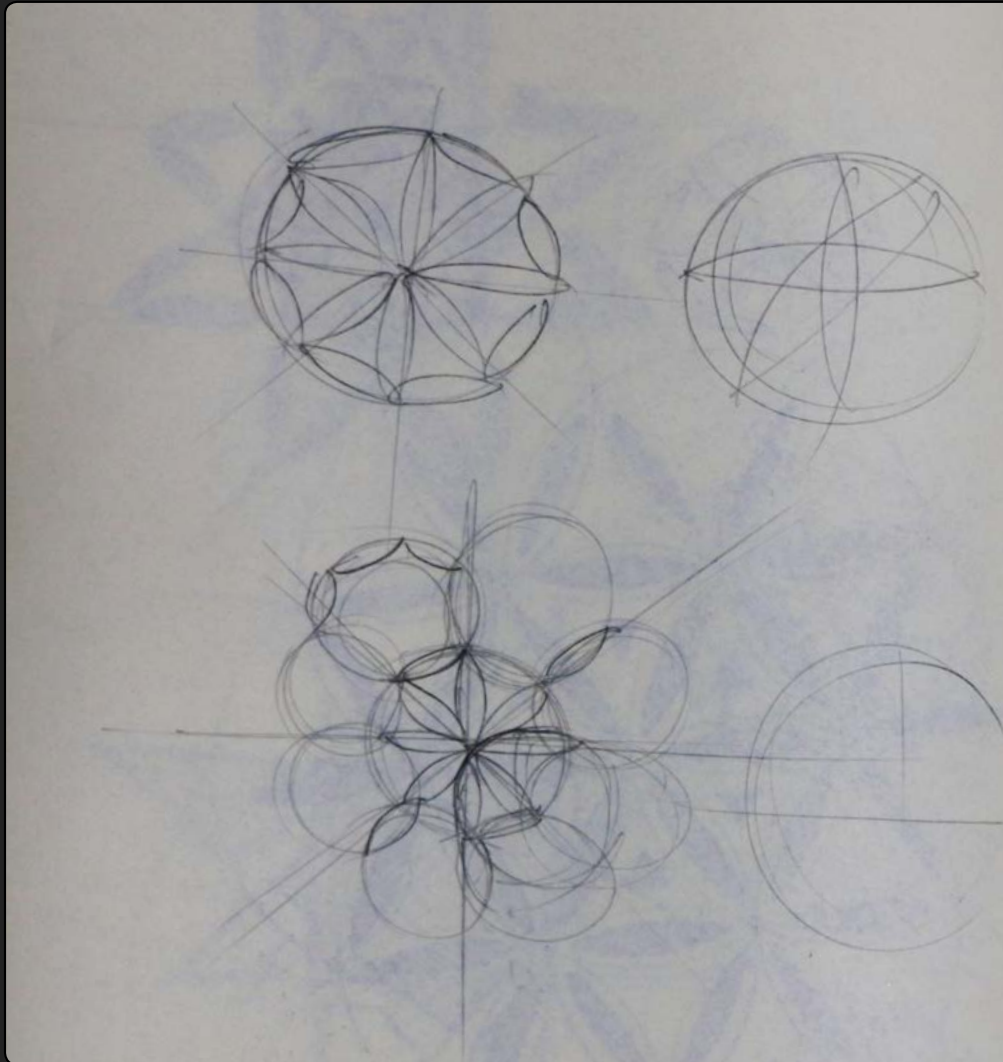
D/ Movement of King



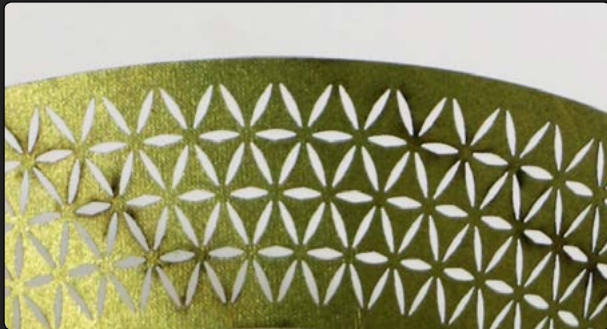
D/ King/ Ideation of patterns



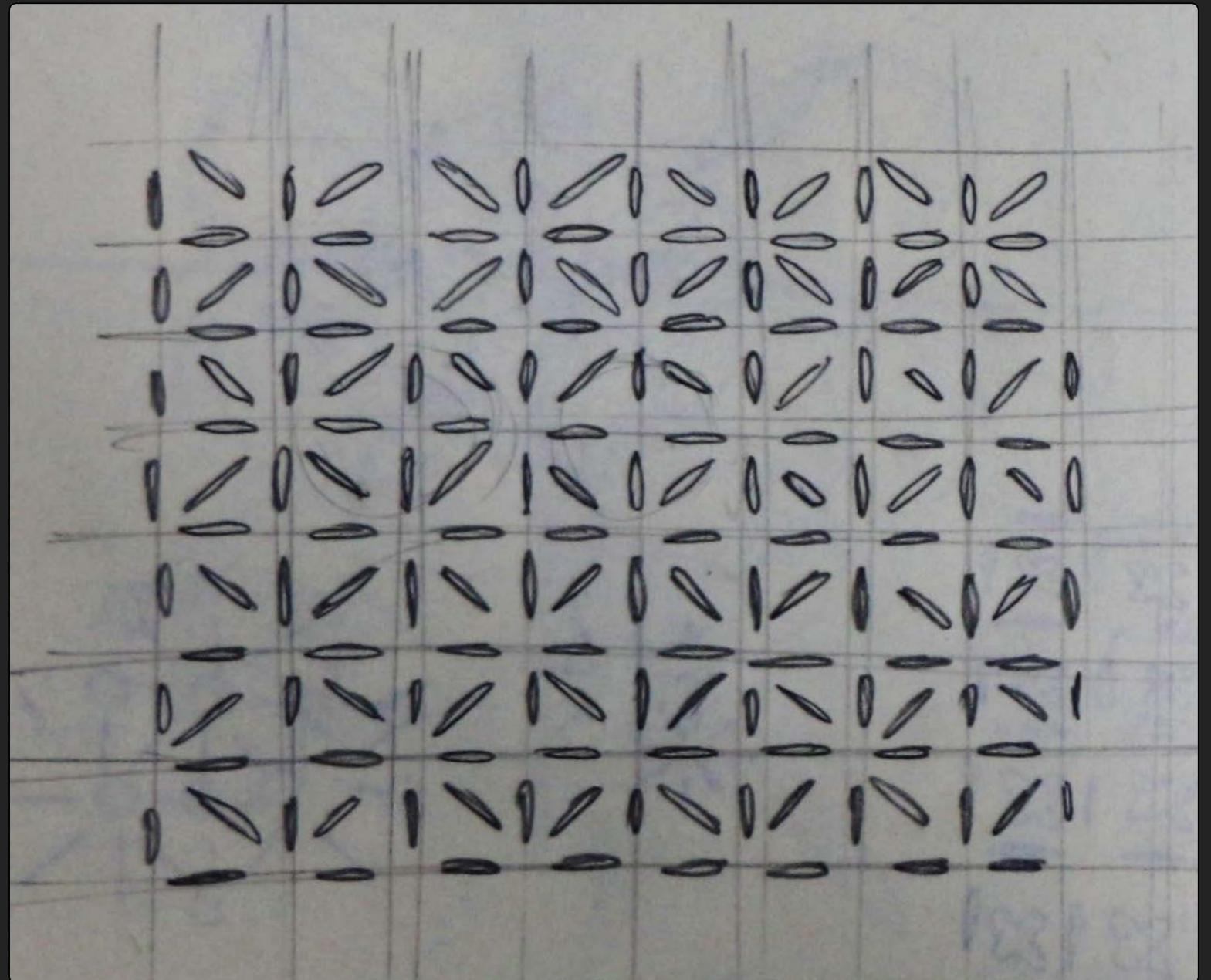
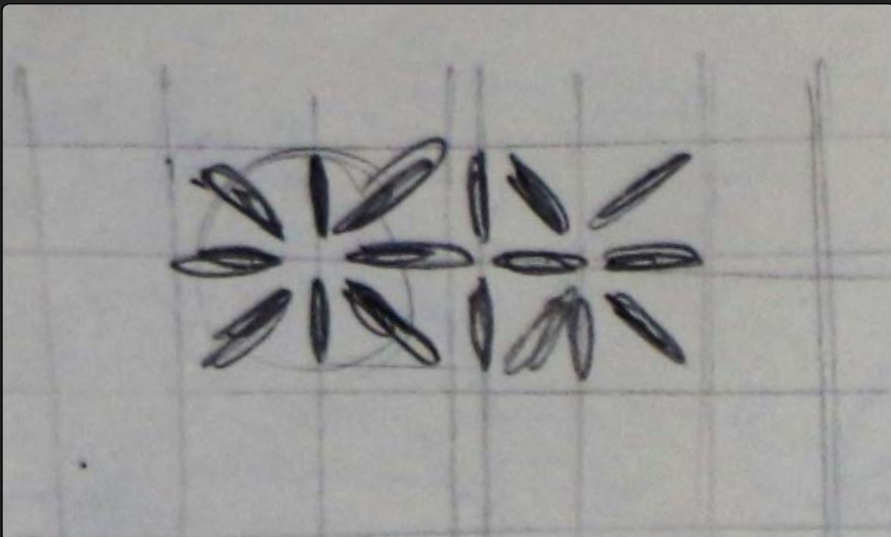
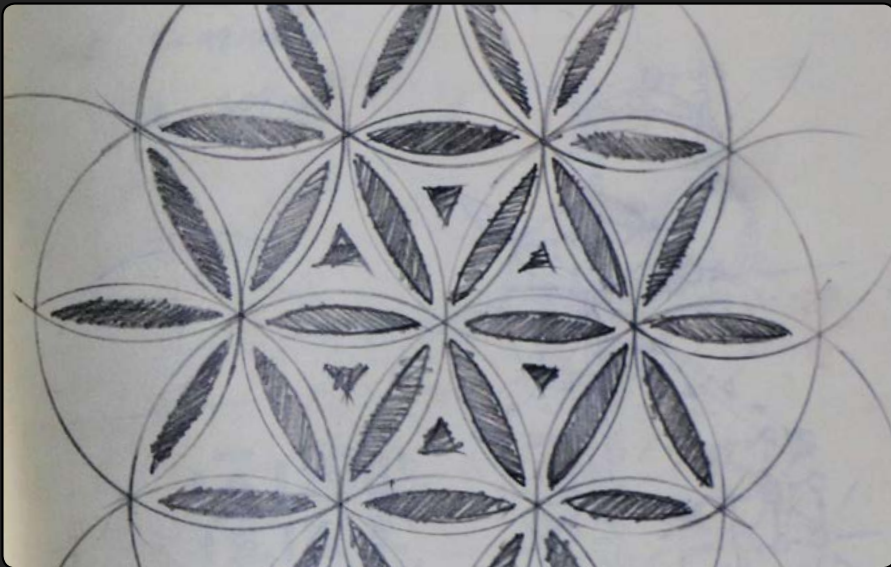
D / King / Ideation of patterns



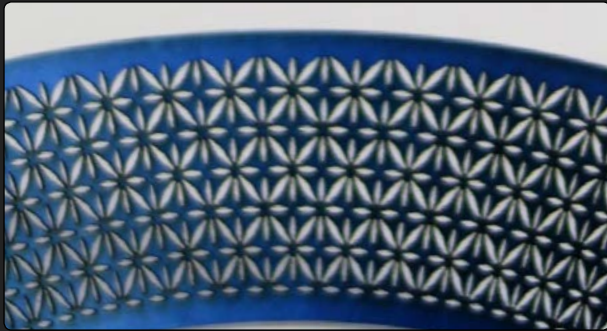
D / King / 1



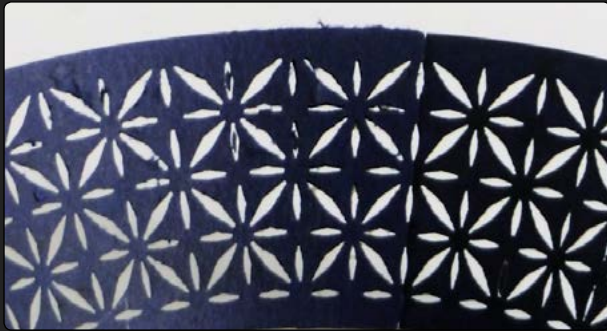
D / King / Ideation / six to eight



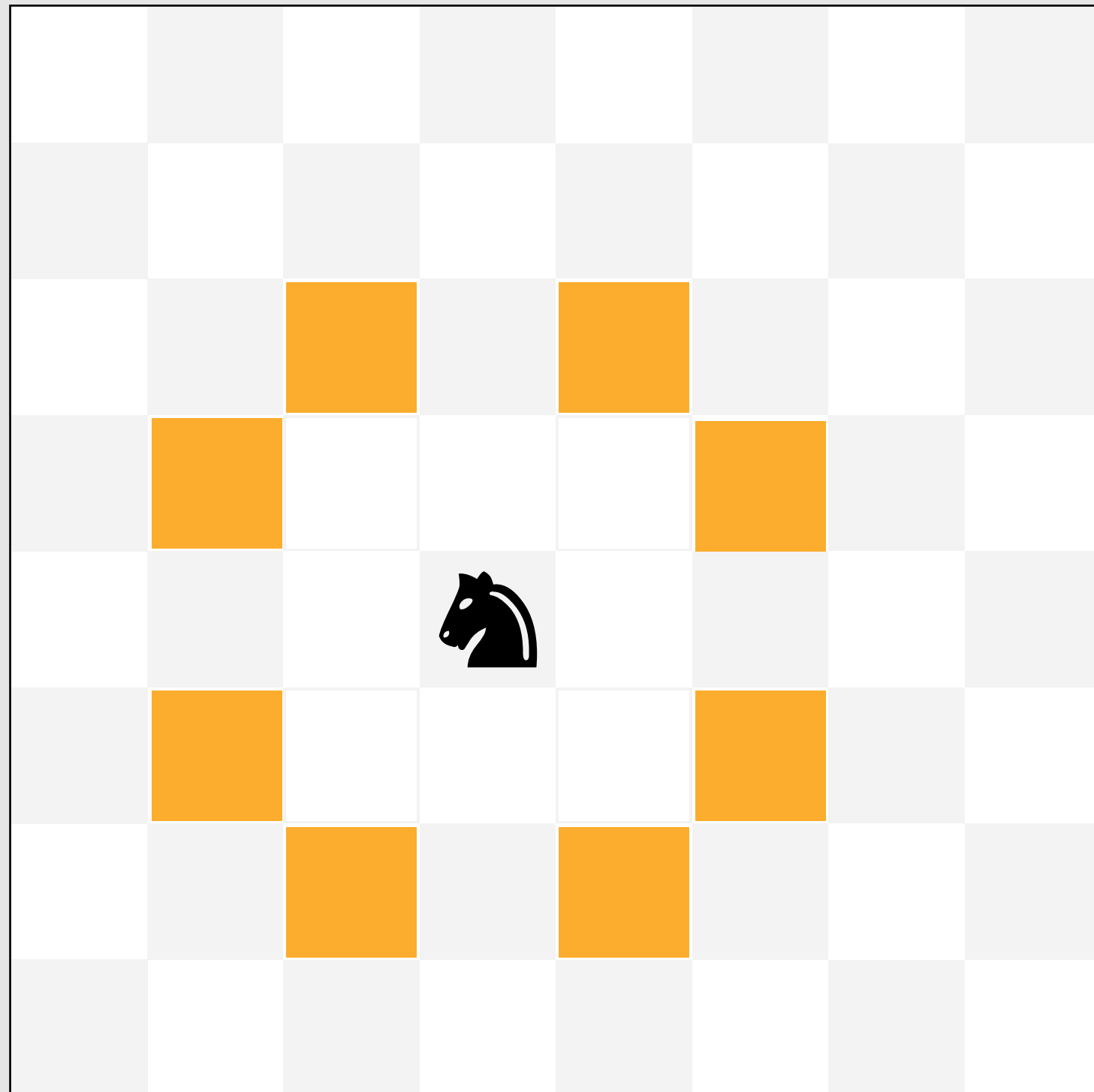
D / King / 2



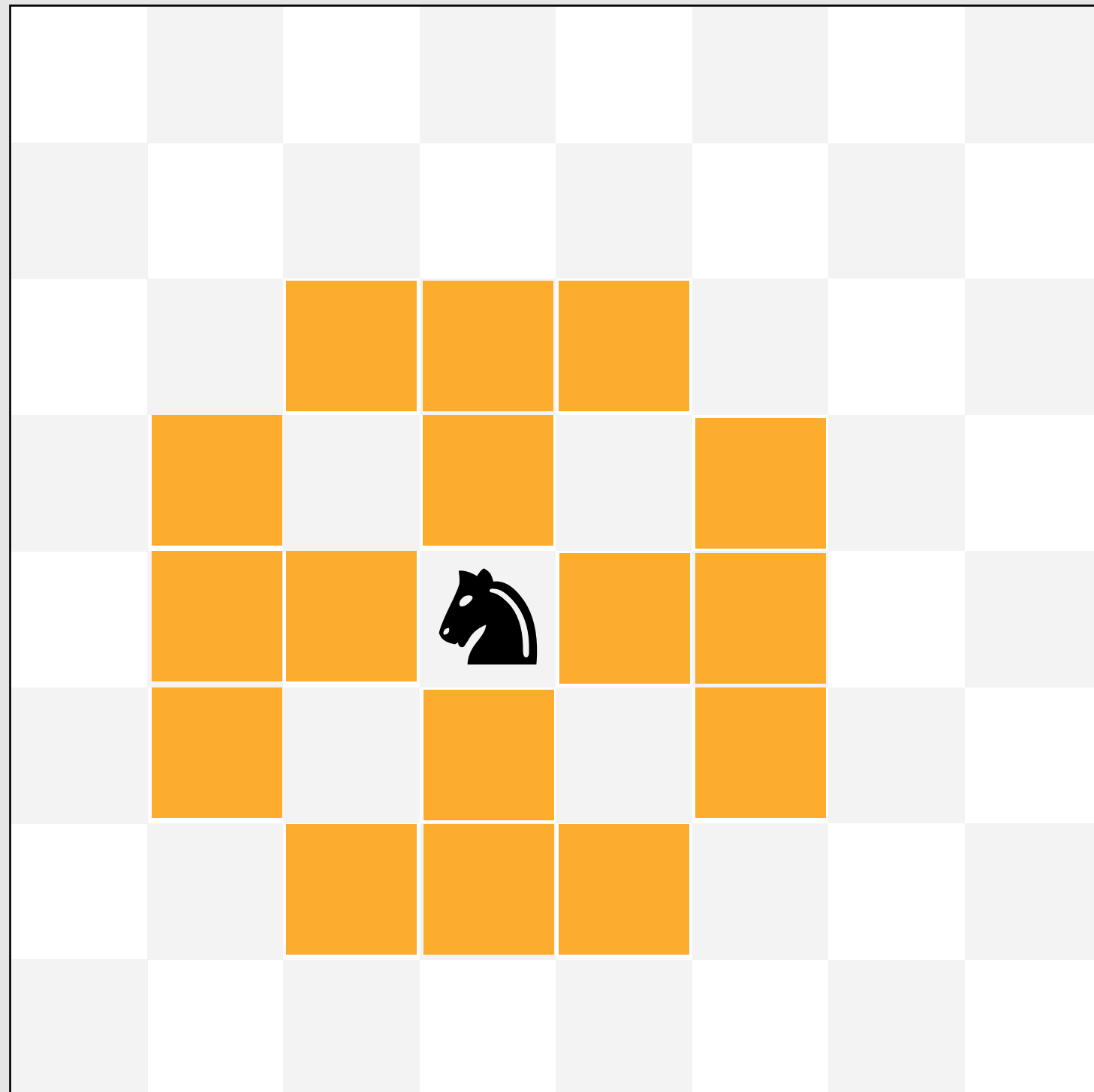
D / King / 3



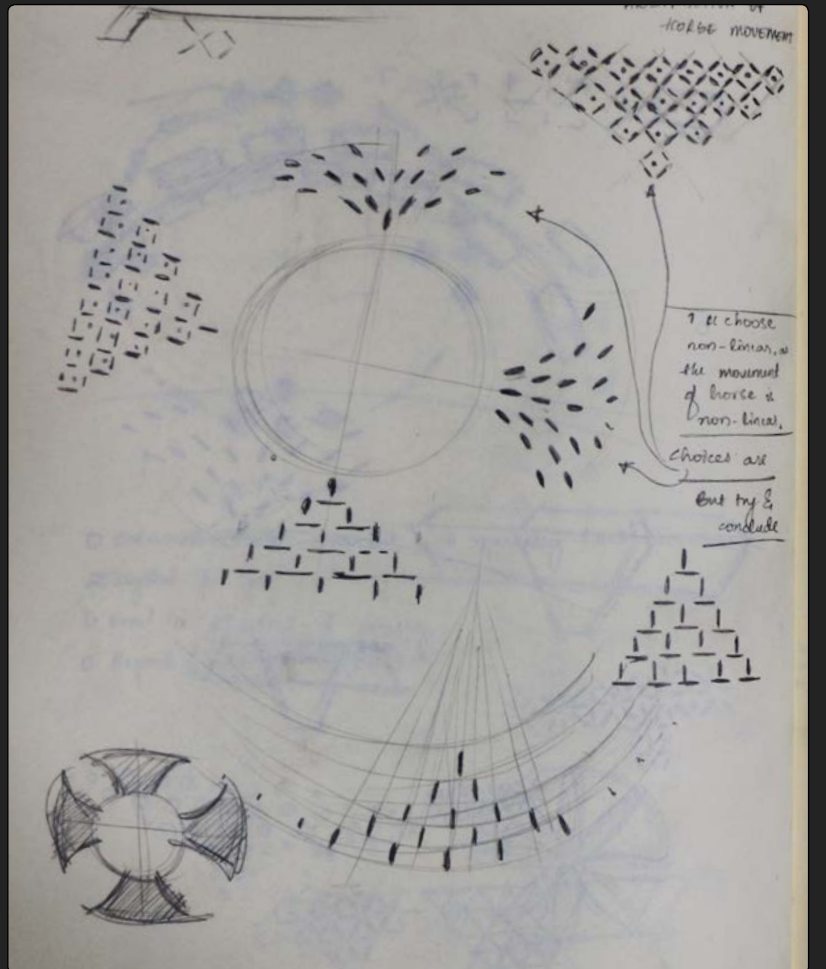
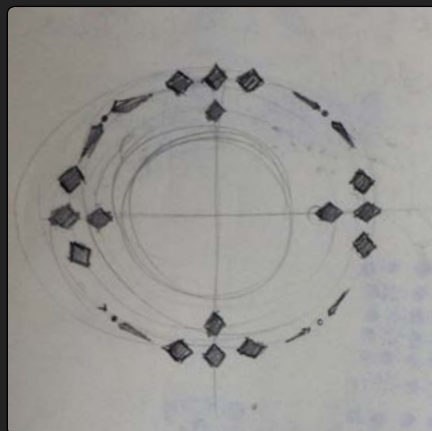
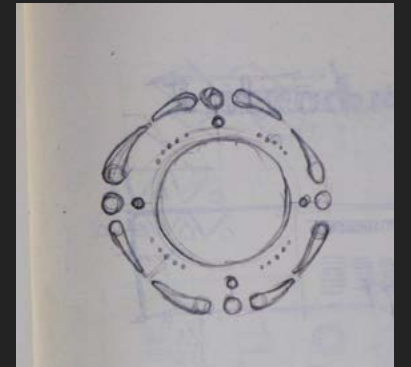
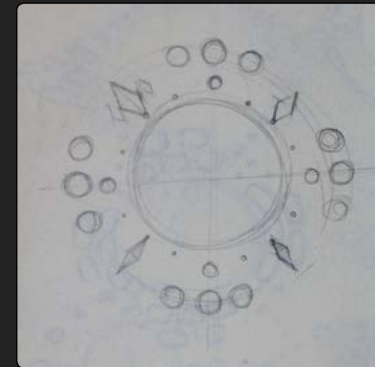
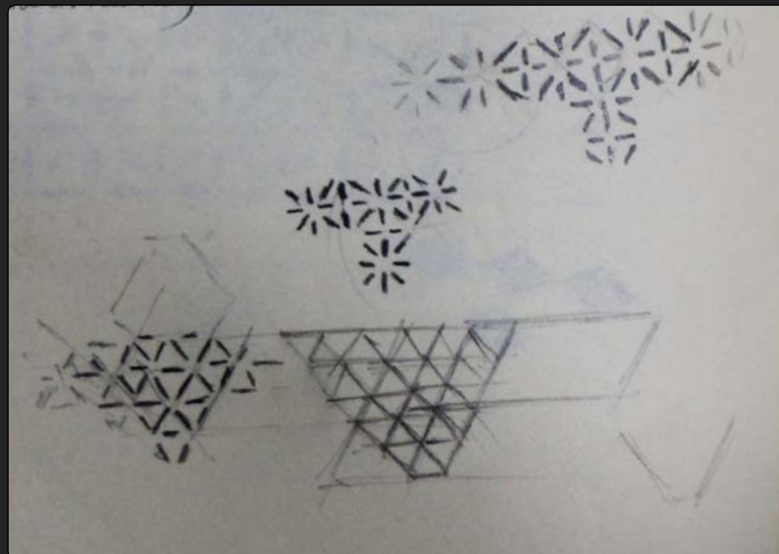
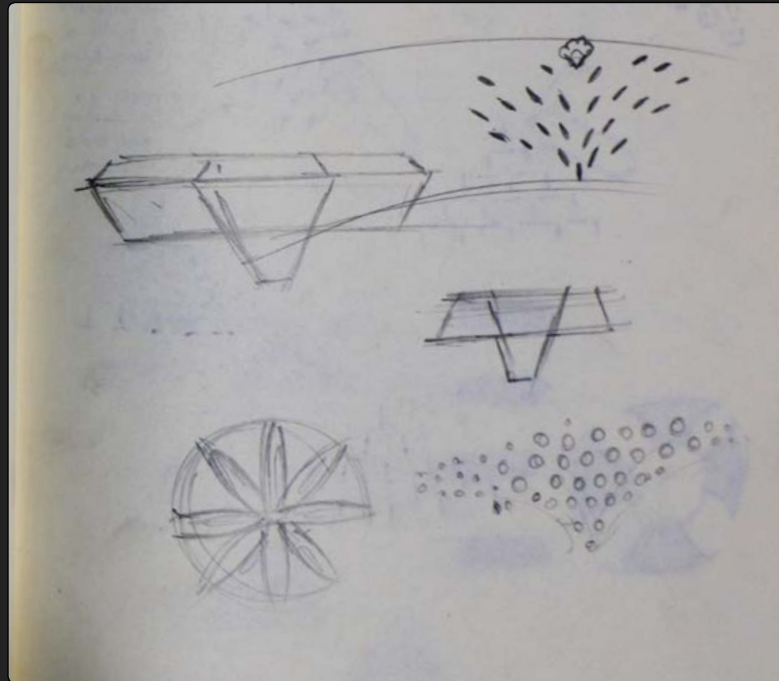
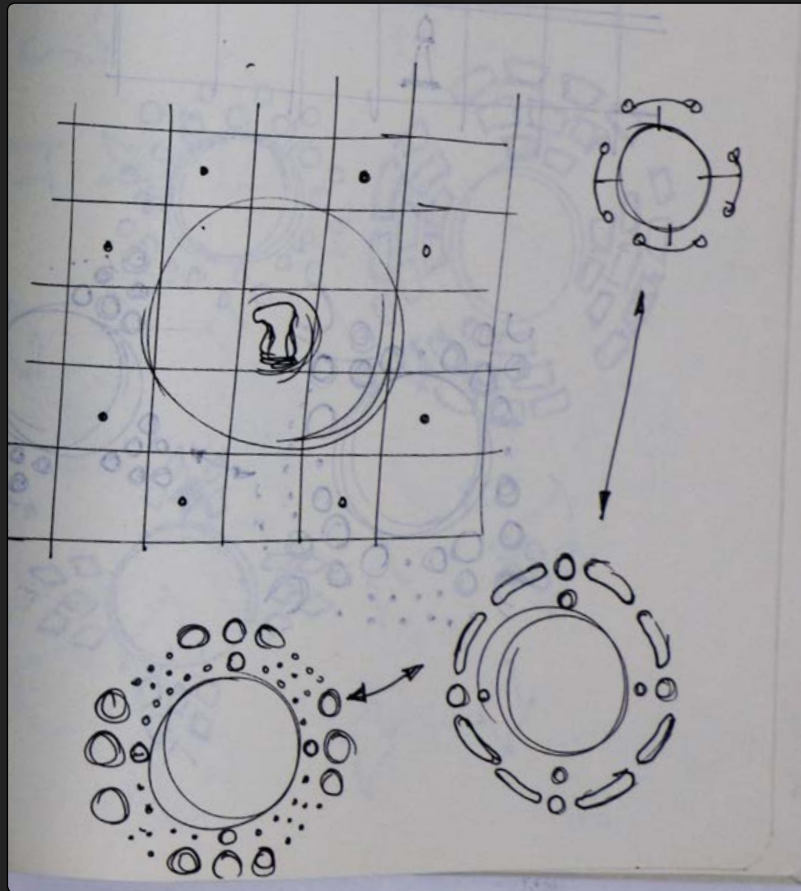
D/ Movement of Horse



D/ Movement of Horse



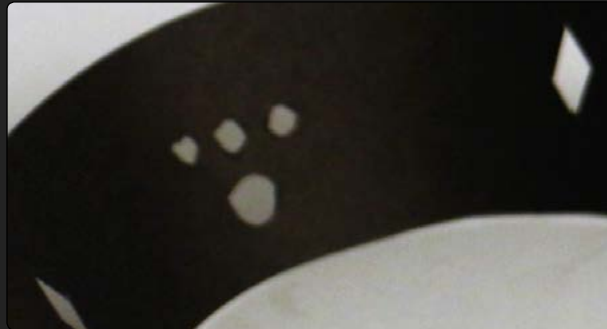
D/ Horse/ Ideation of Patterns



D/ Horse/ 1



D/ Horse/ 2



D/ Horse/ 3



D/ Horse/ 4



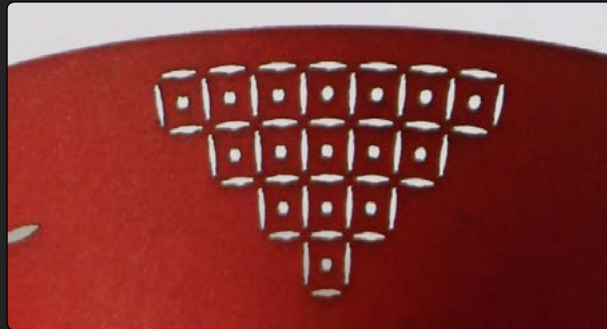
D/ Horse/ 5



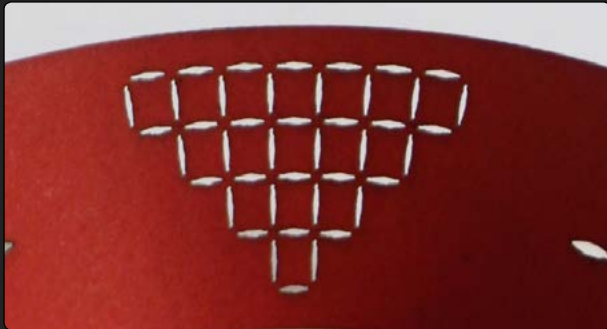
D/ Horse/ 6



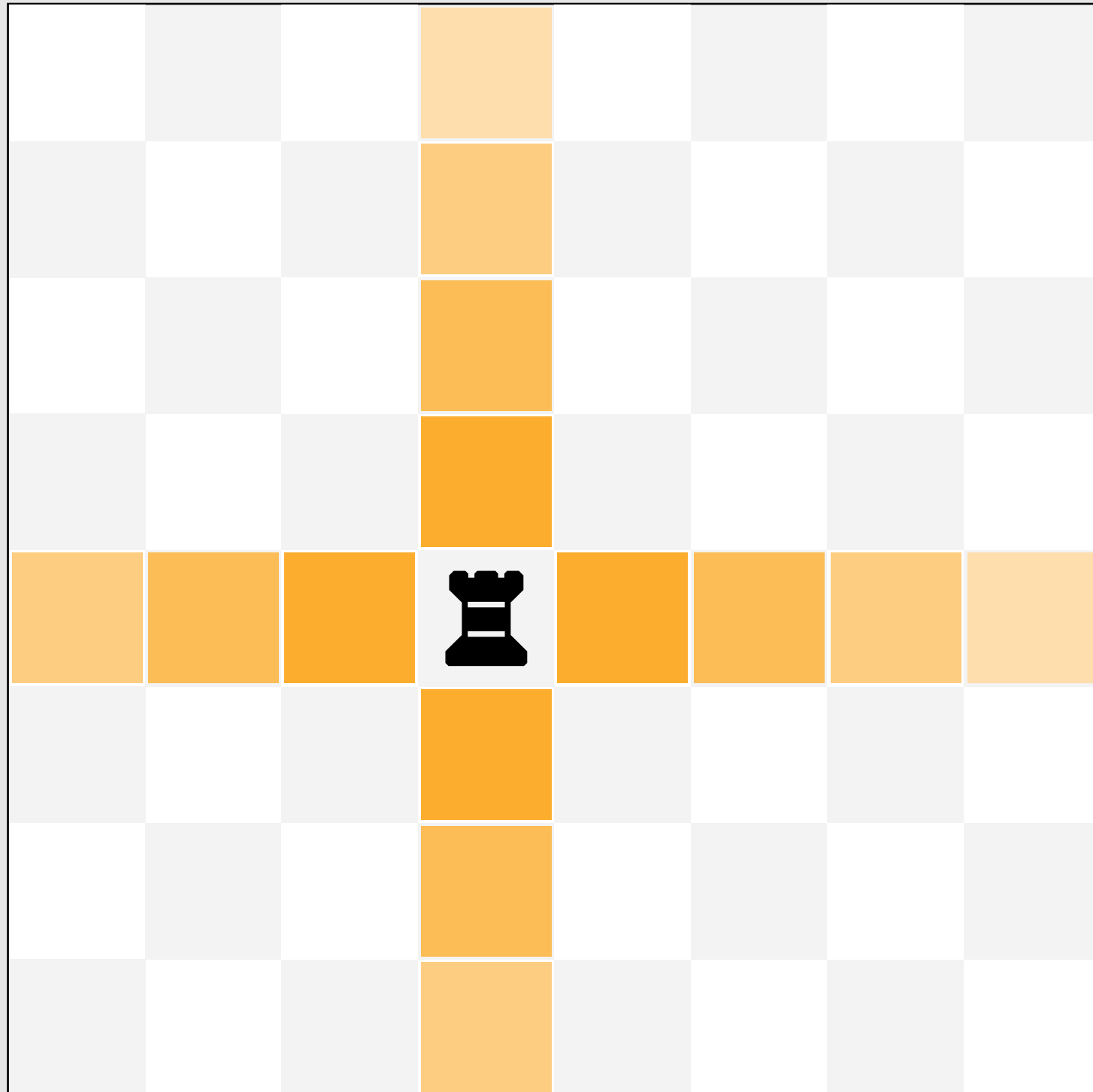
D/ Horse/ 7



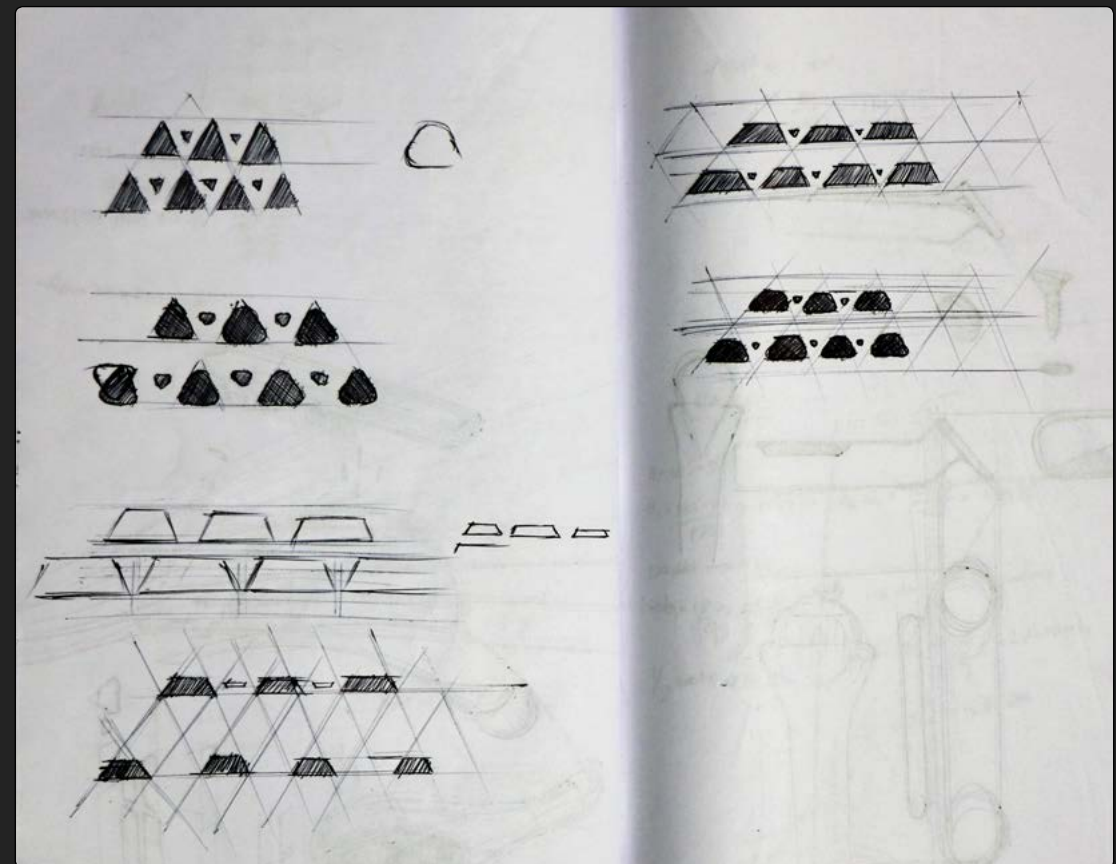
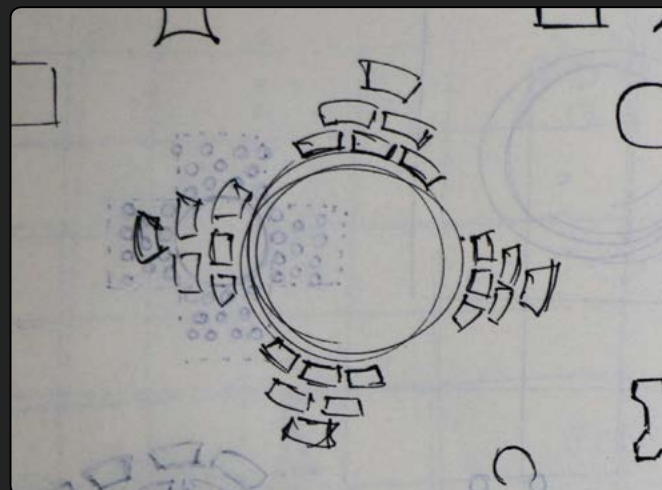
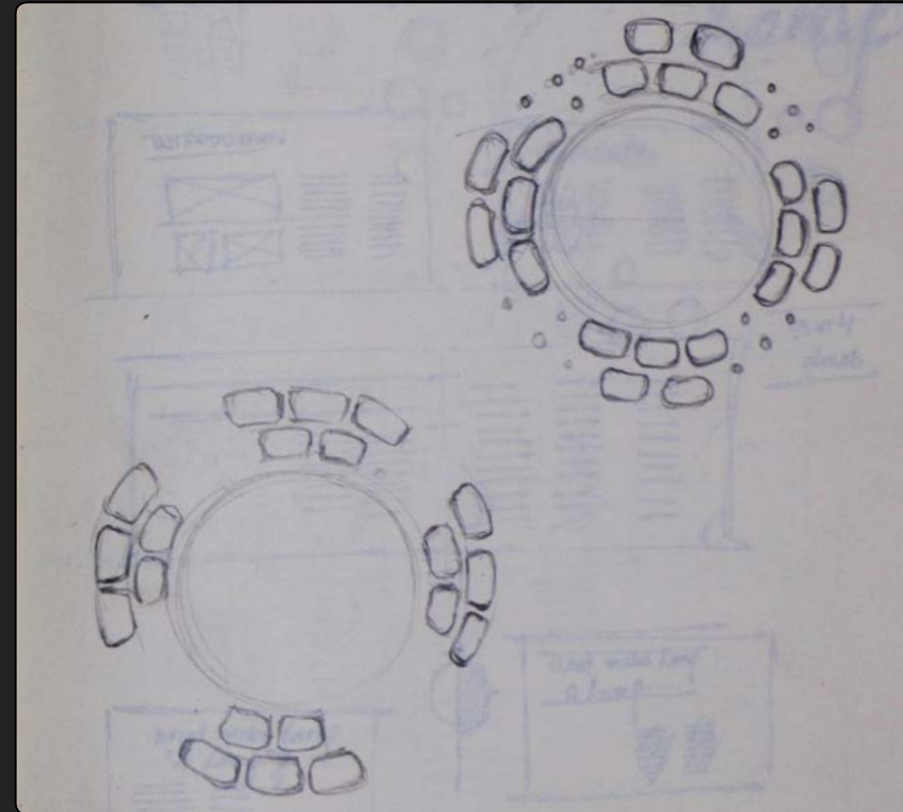
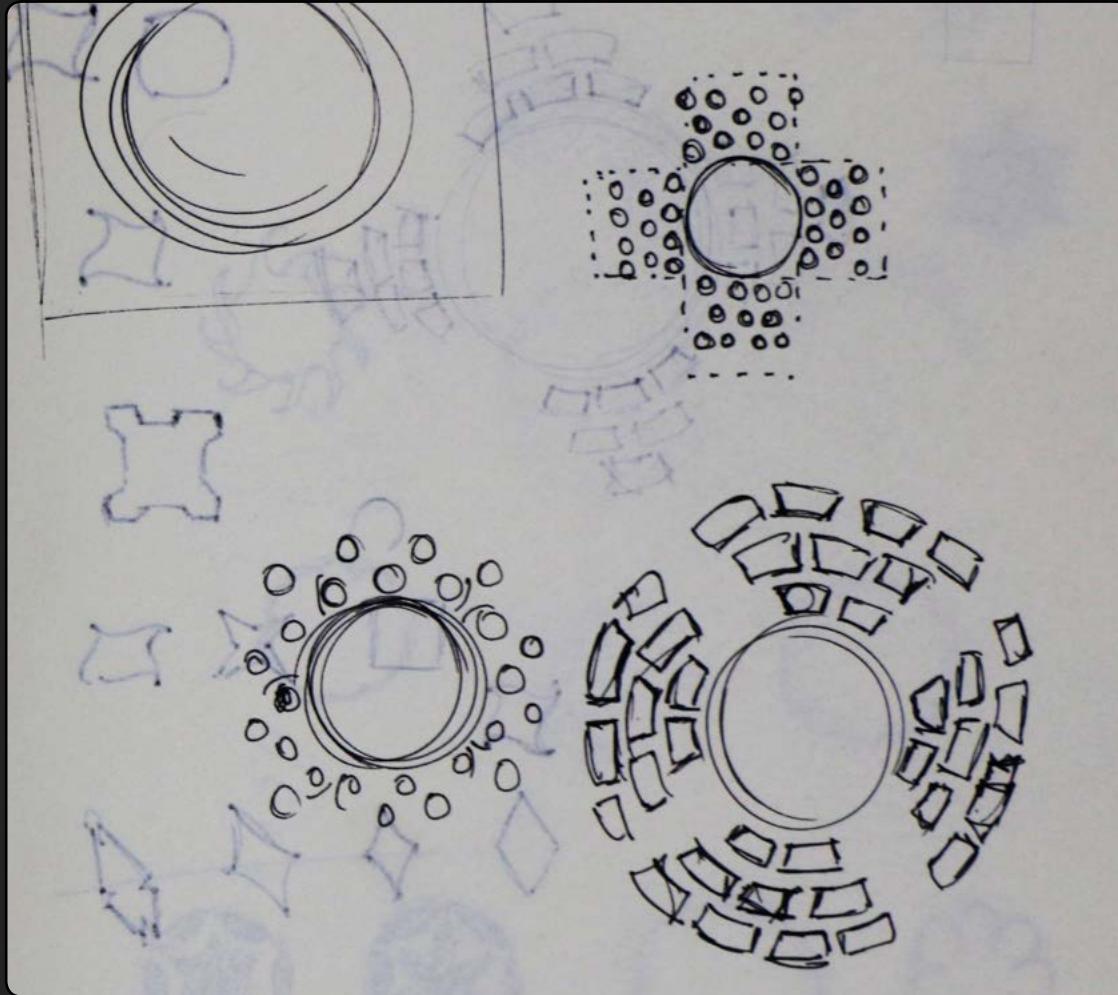
D/ Horse/ 8



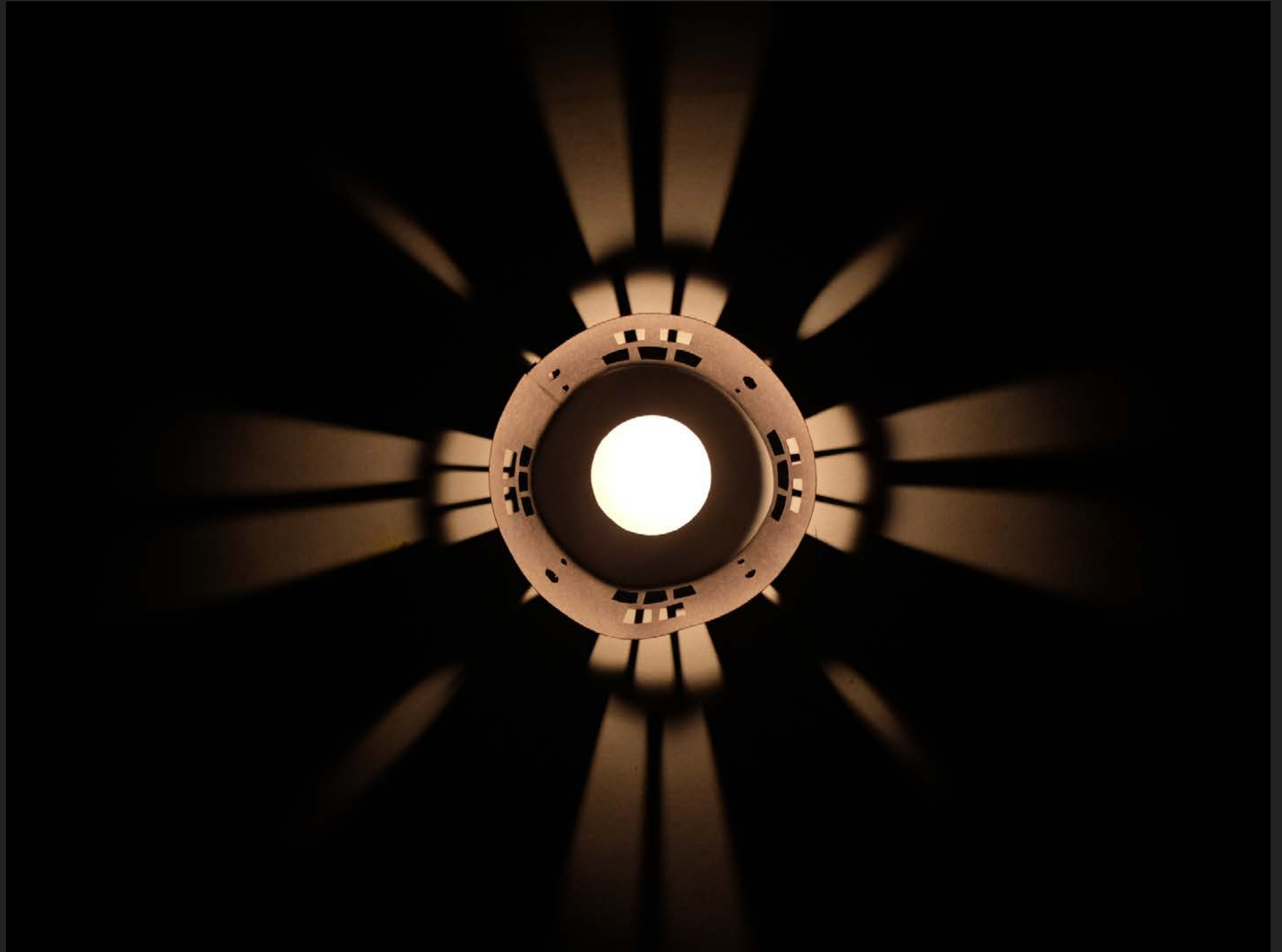
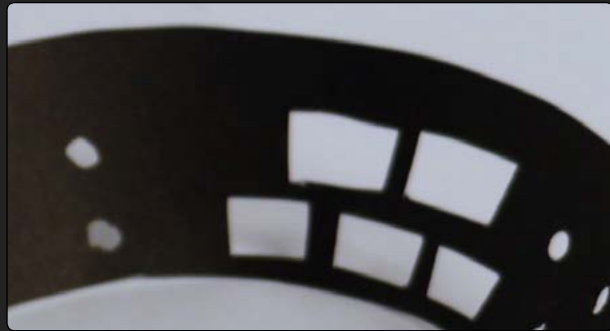
D/ Movement of Elephant



D/ Elephant/ Ideation of patterns



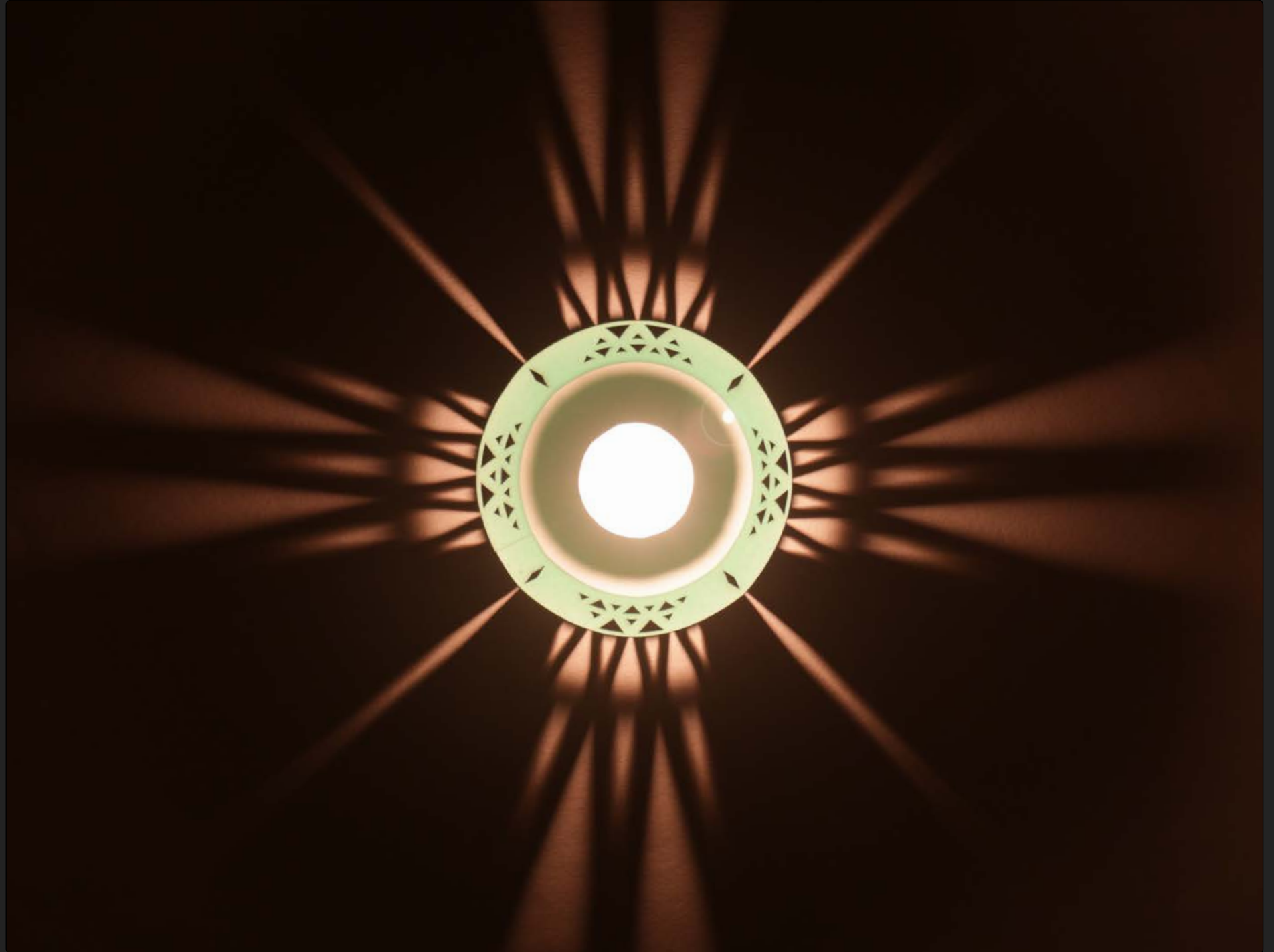
D/ Elephant/ 1a, 1b



D / Elephant / 2

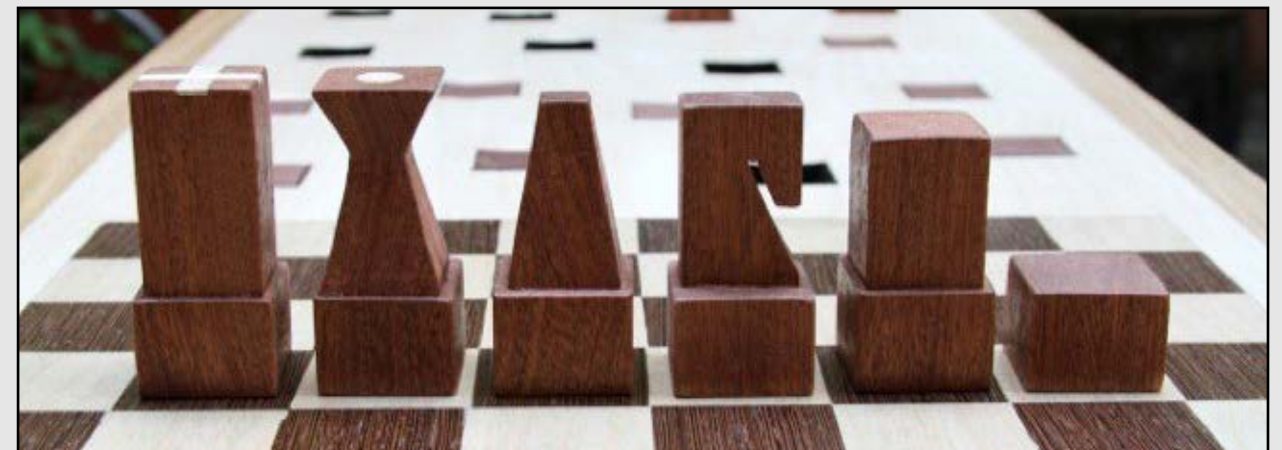


D / Elephant / 3

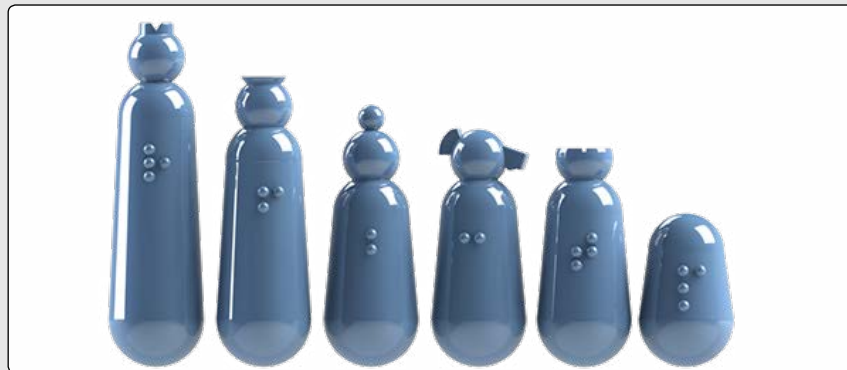


2. Forms

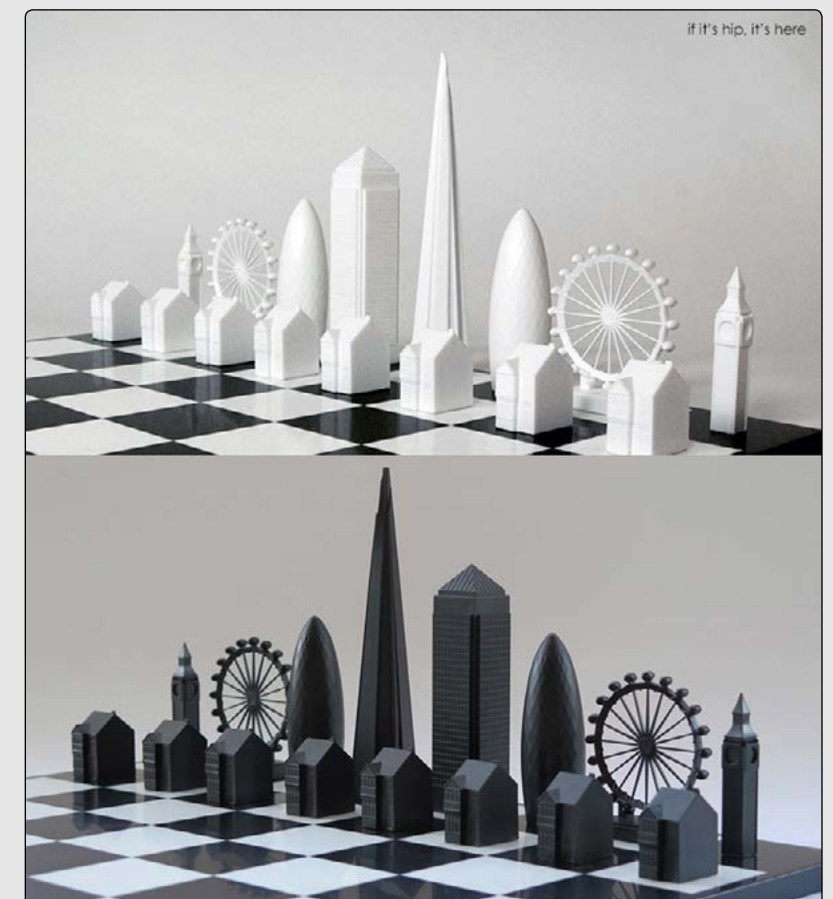
D/ Forms/ Standard



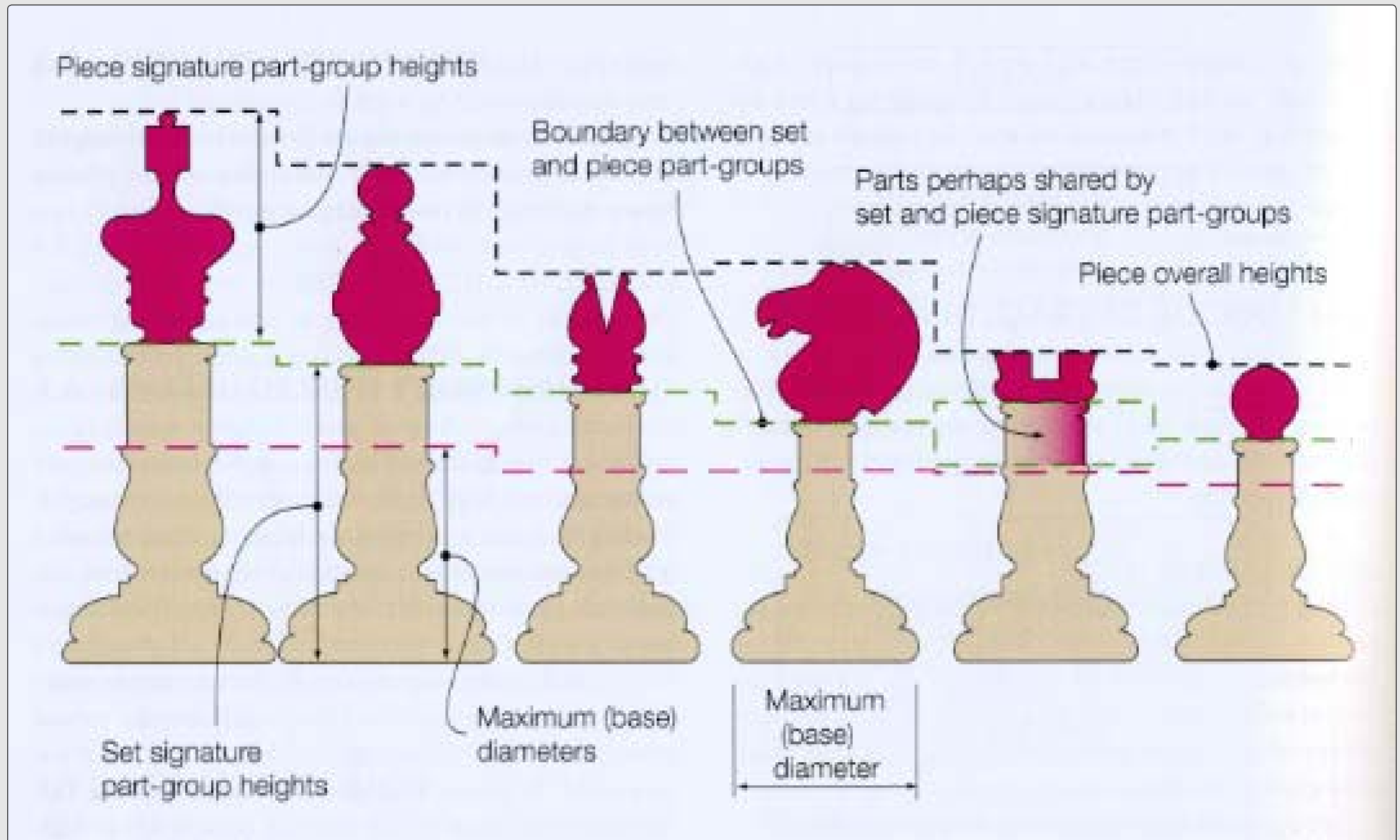
D/ Forms/ Slightly Abstract



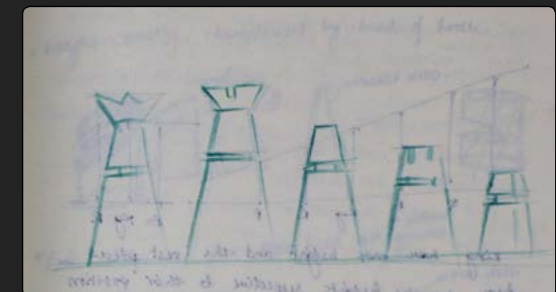
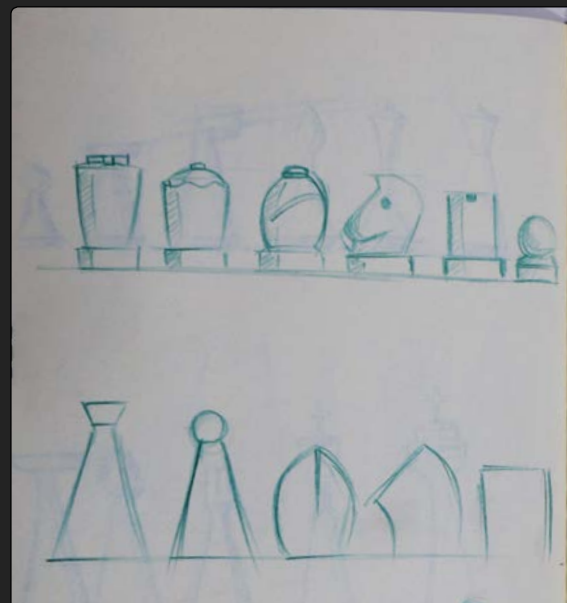
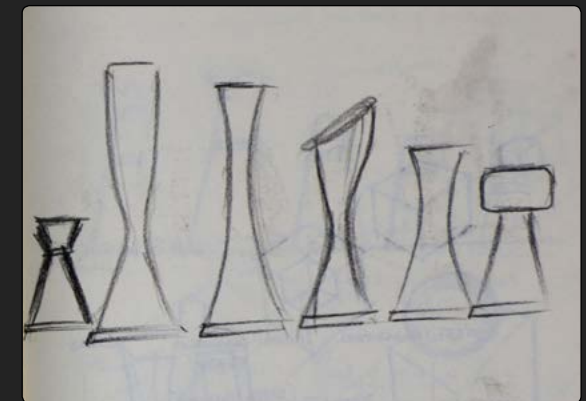
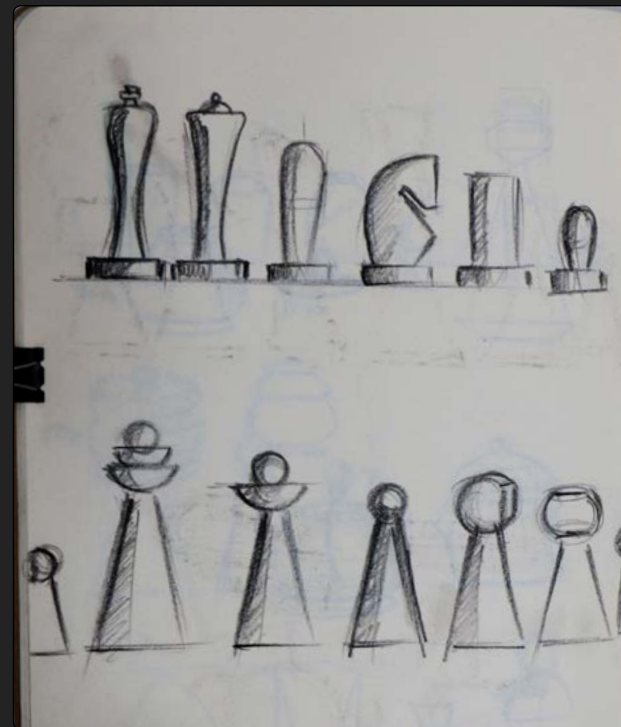
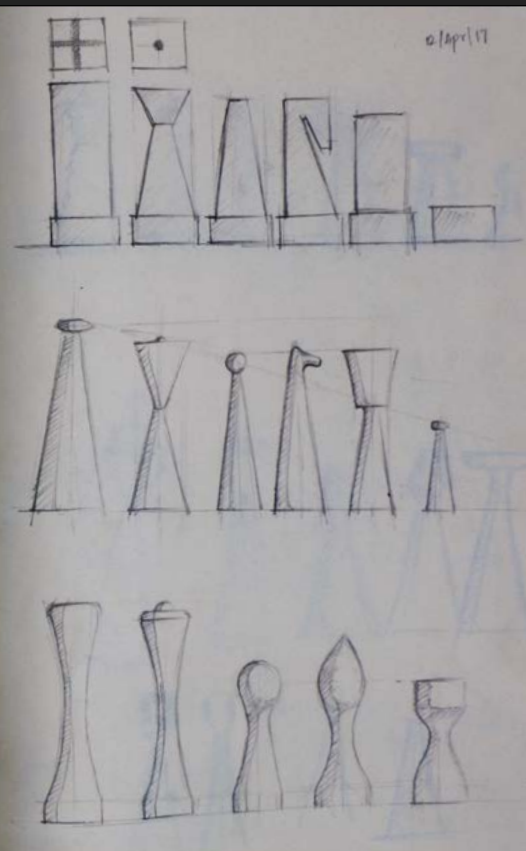
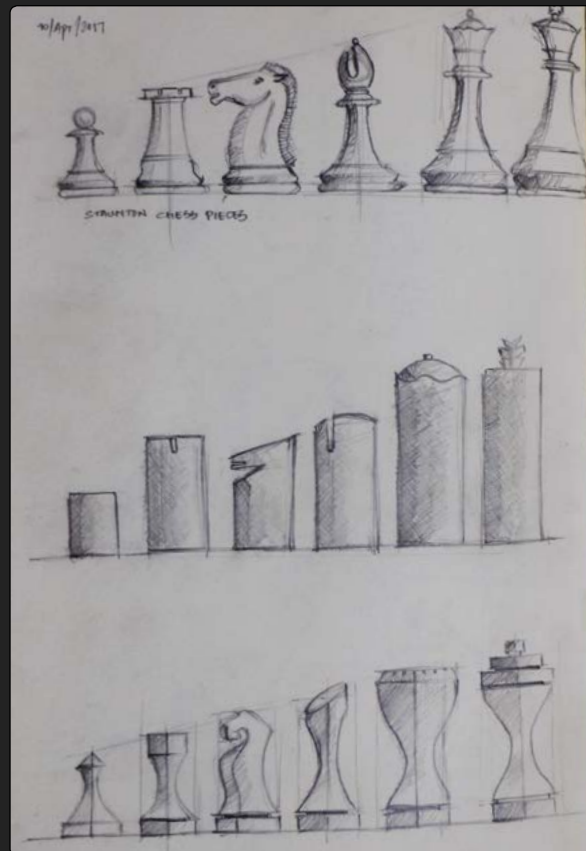
D/ Forms/ Abstract



D/ Forms/ Construction



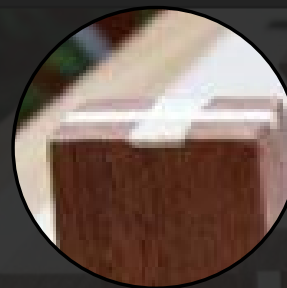
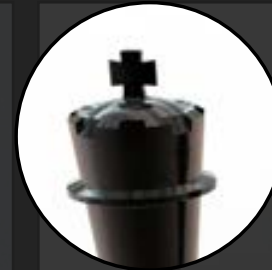
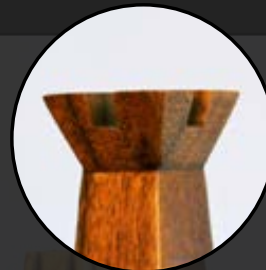
D/ Forms/ Understanding Forms



D/Forms Characteristics



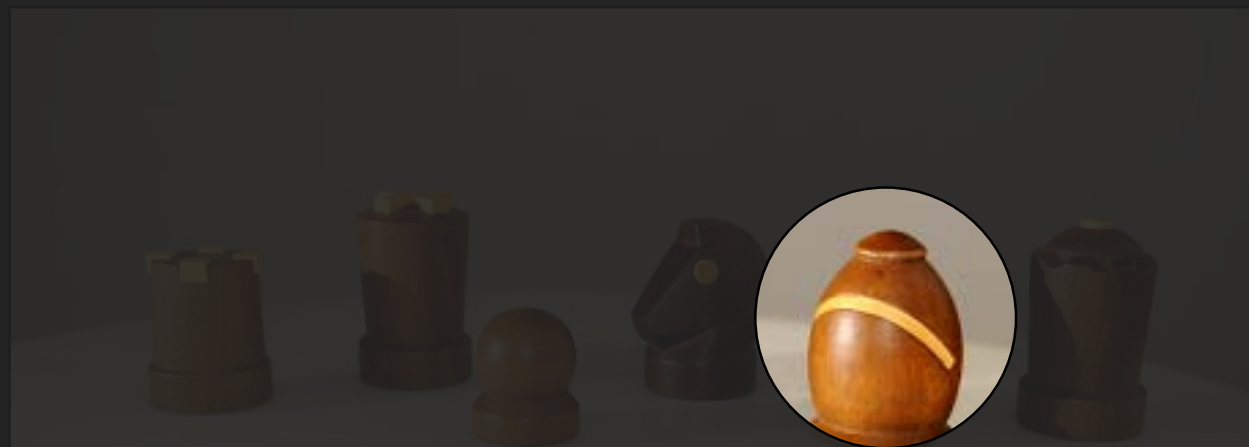
D/ Forms Characteristics/ King



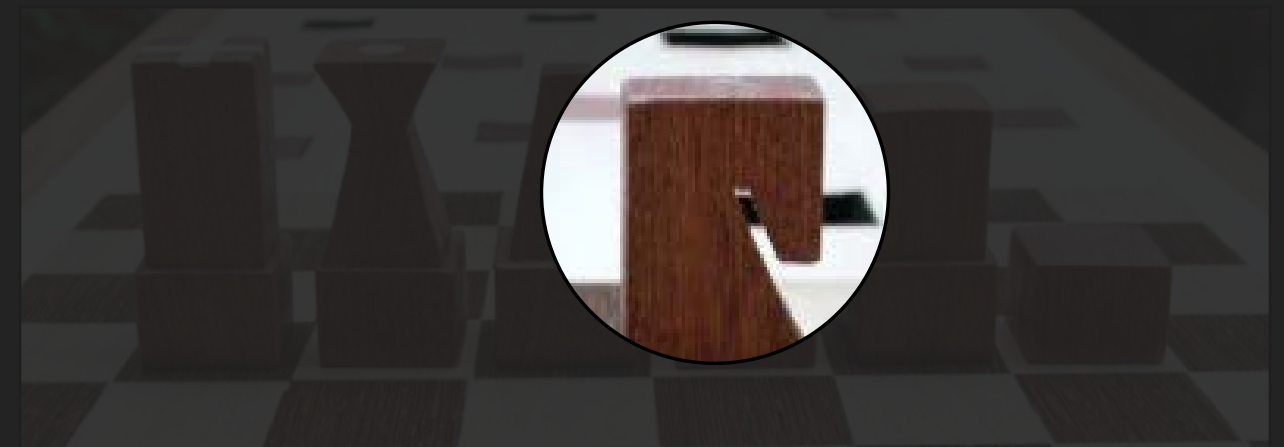
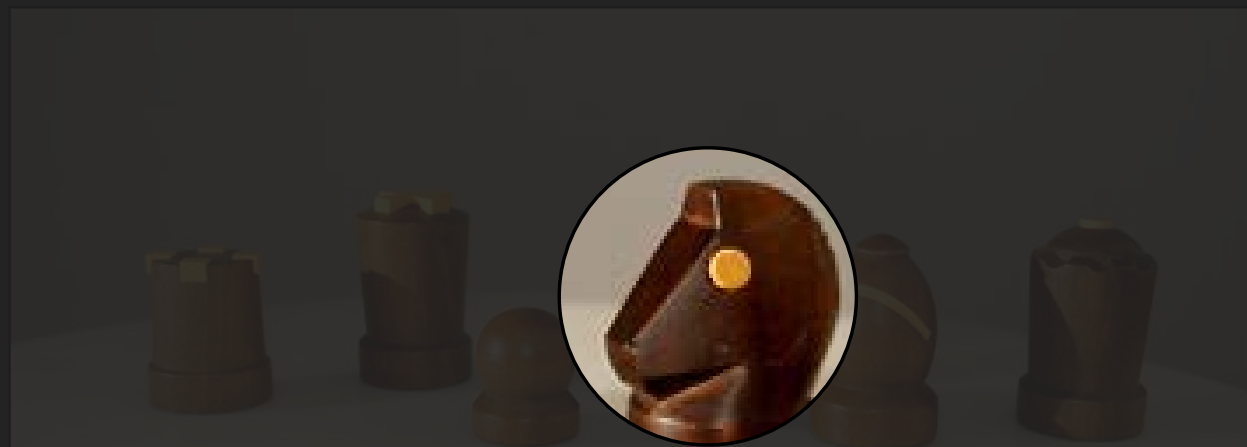
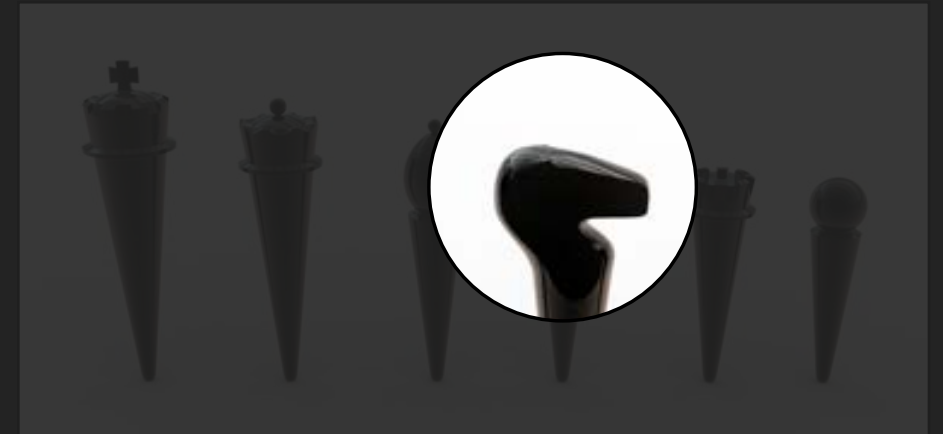
D/ Forms Characteristics/ Queen



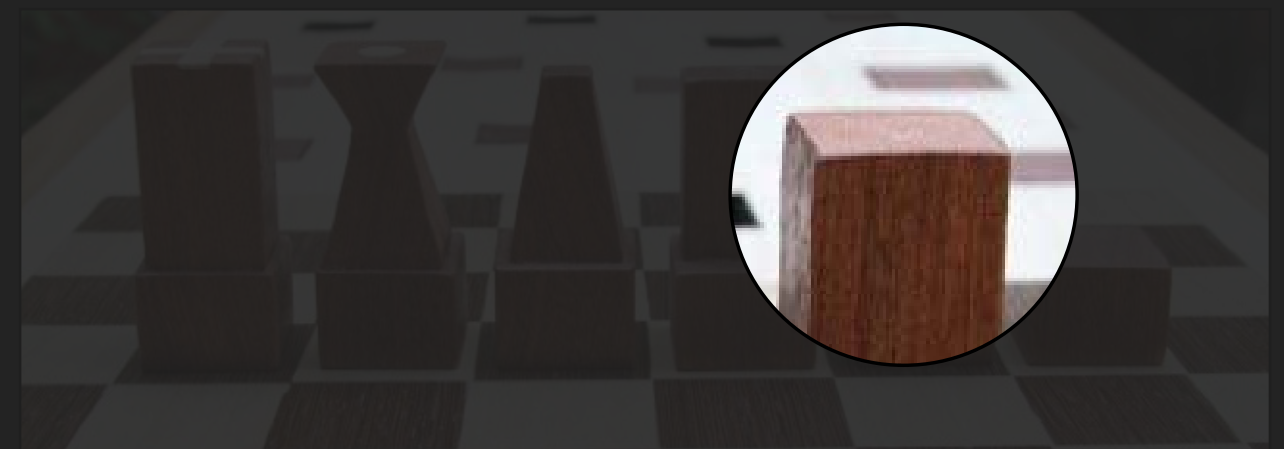
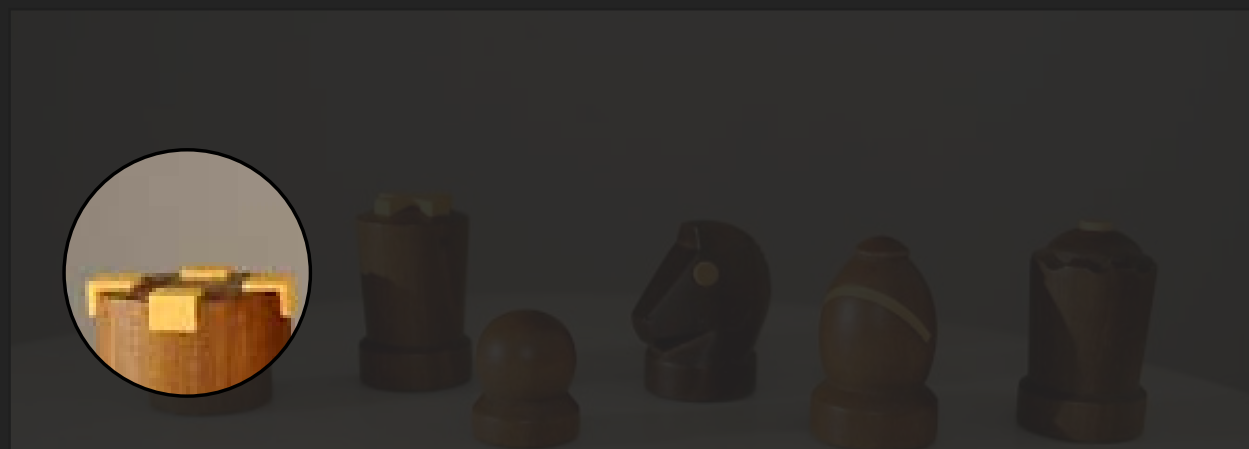
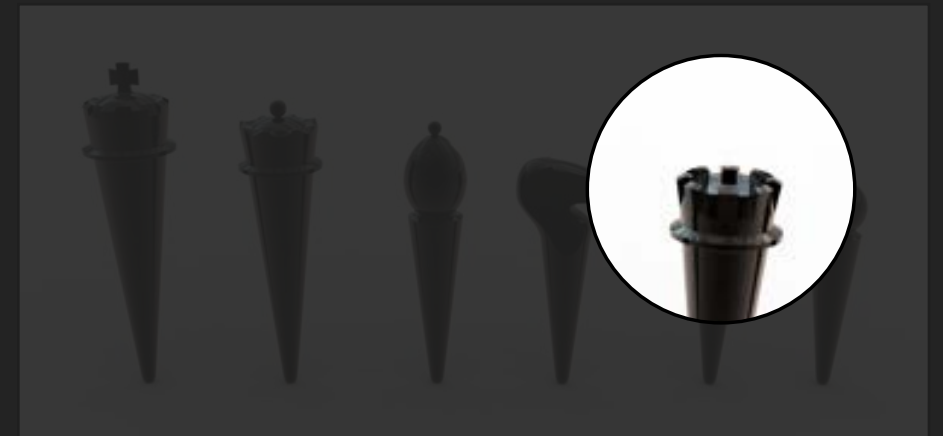
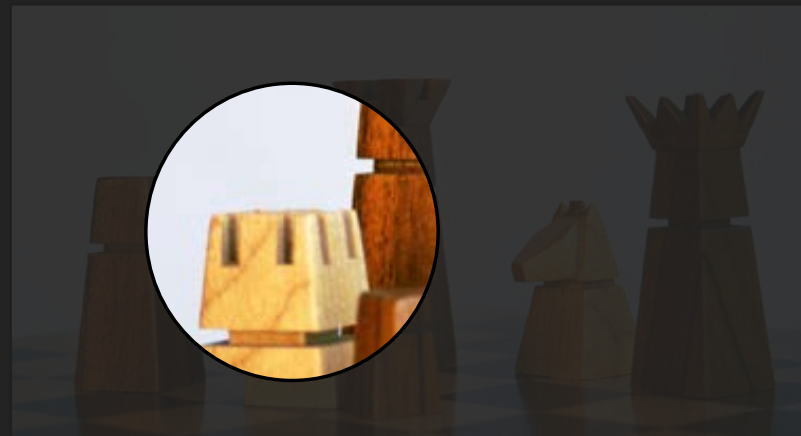
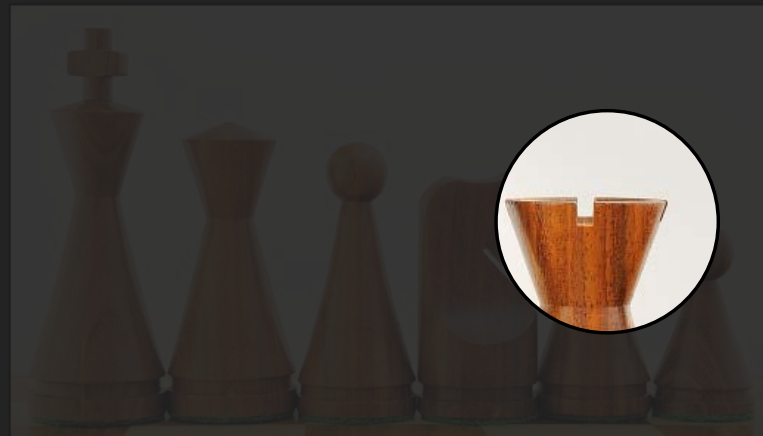
D/ Forms Characteristics/ Camel



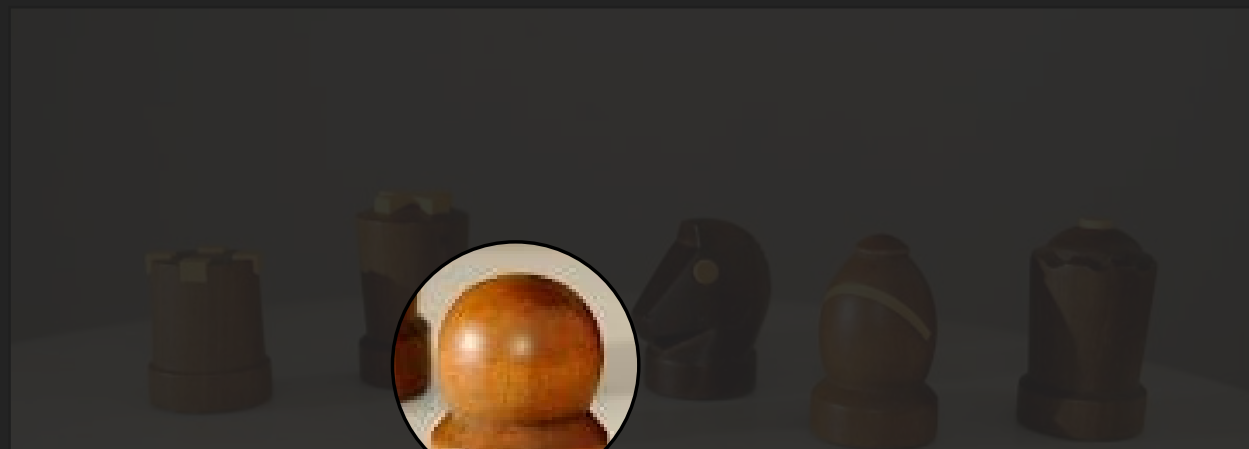
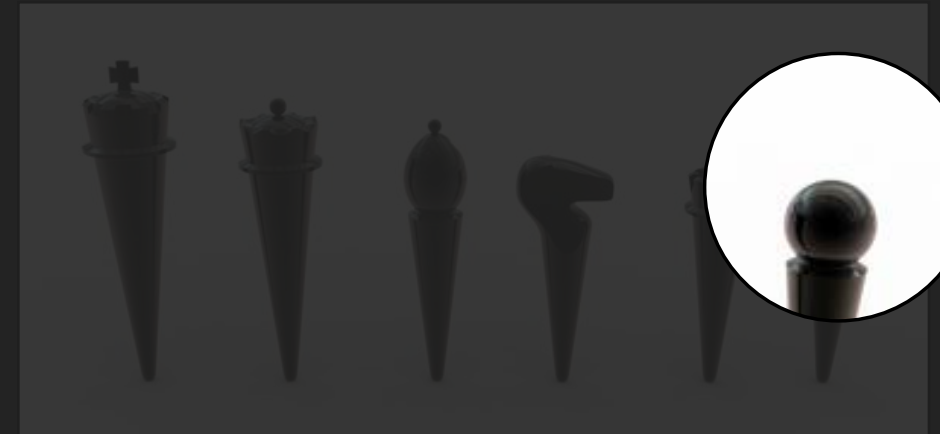
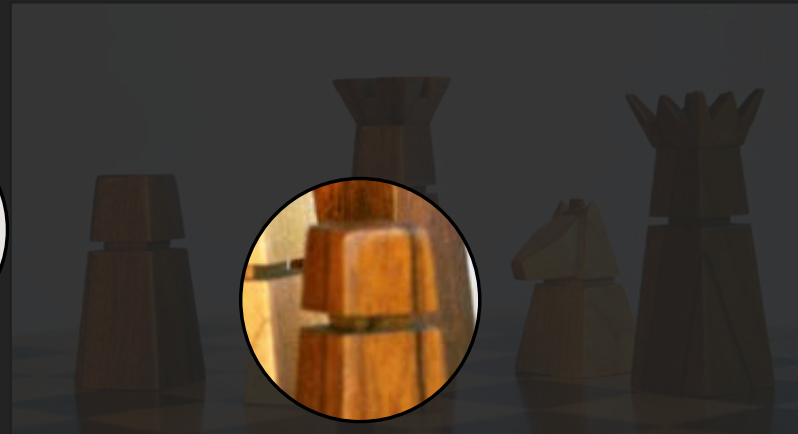
D/ Forms Characteristics/ Horse



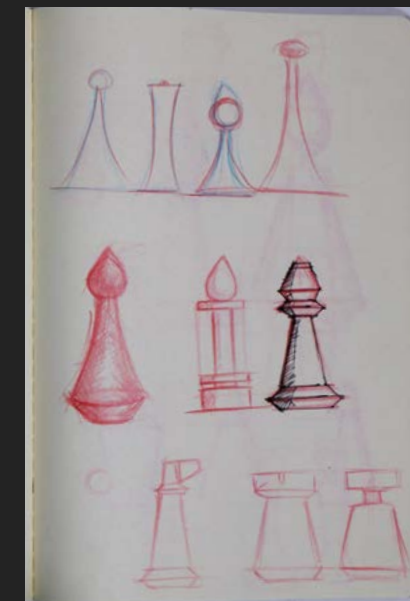
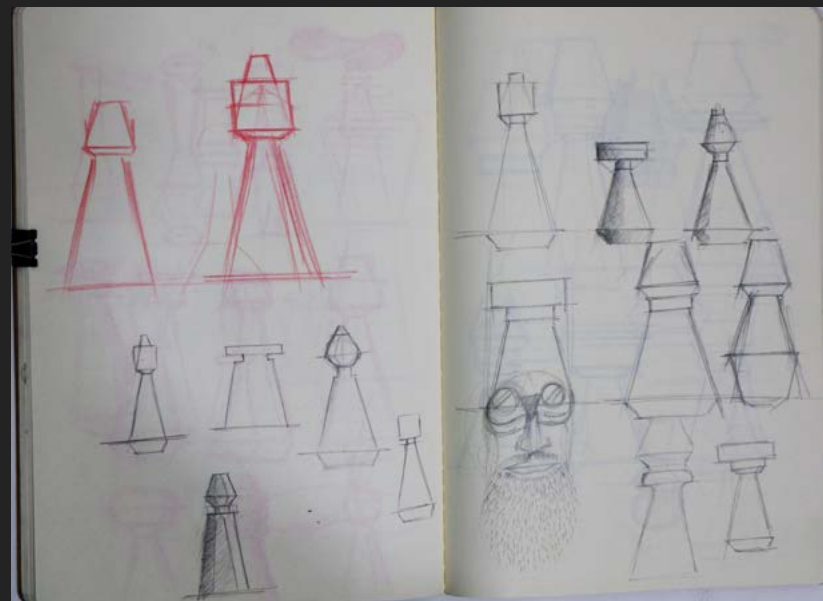
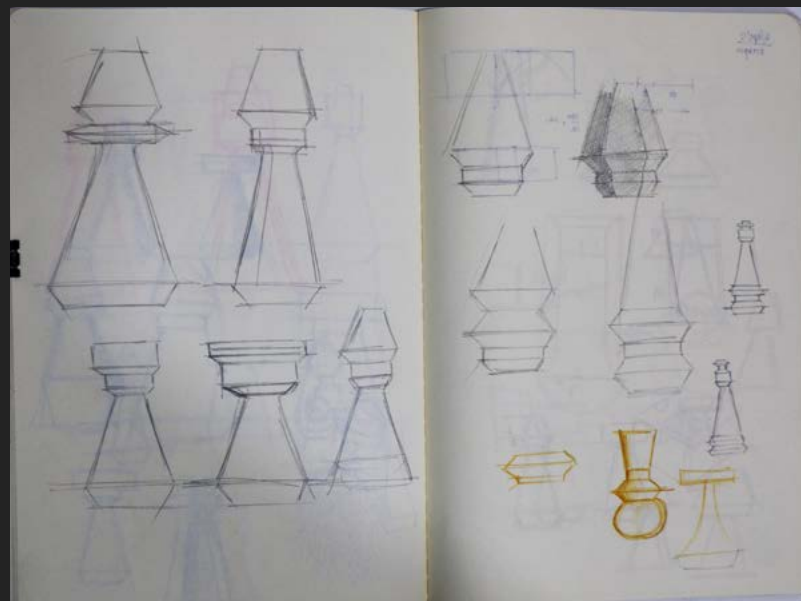
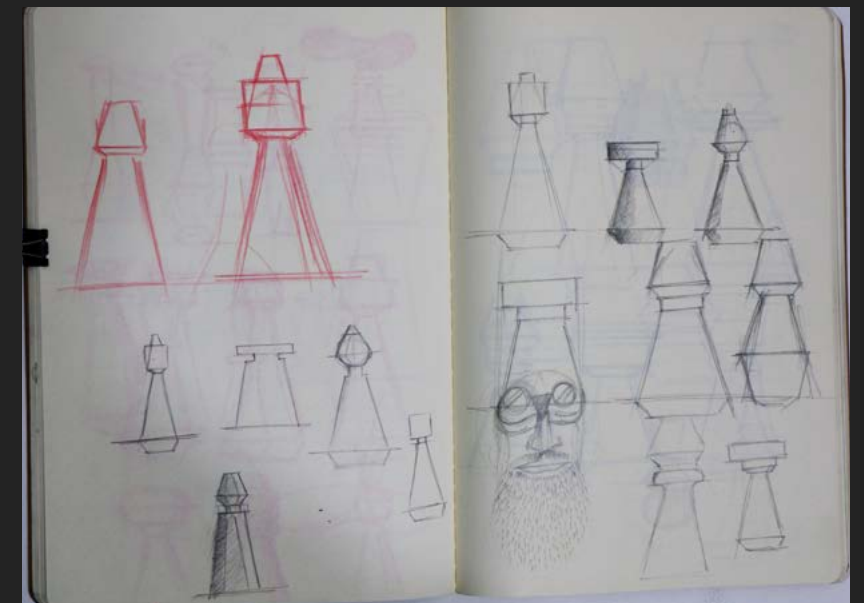
D/ Forms Characteristics/ Elephant



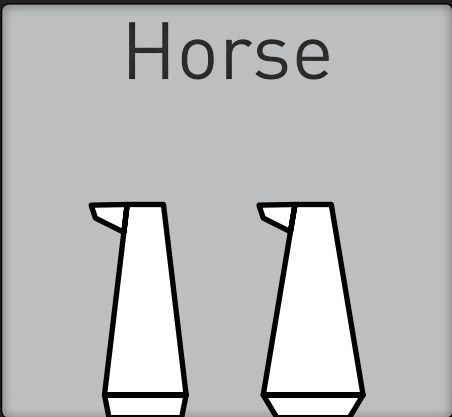
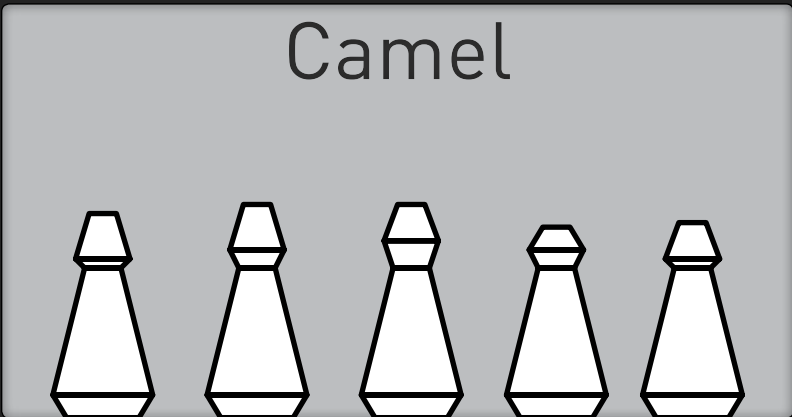
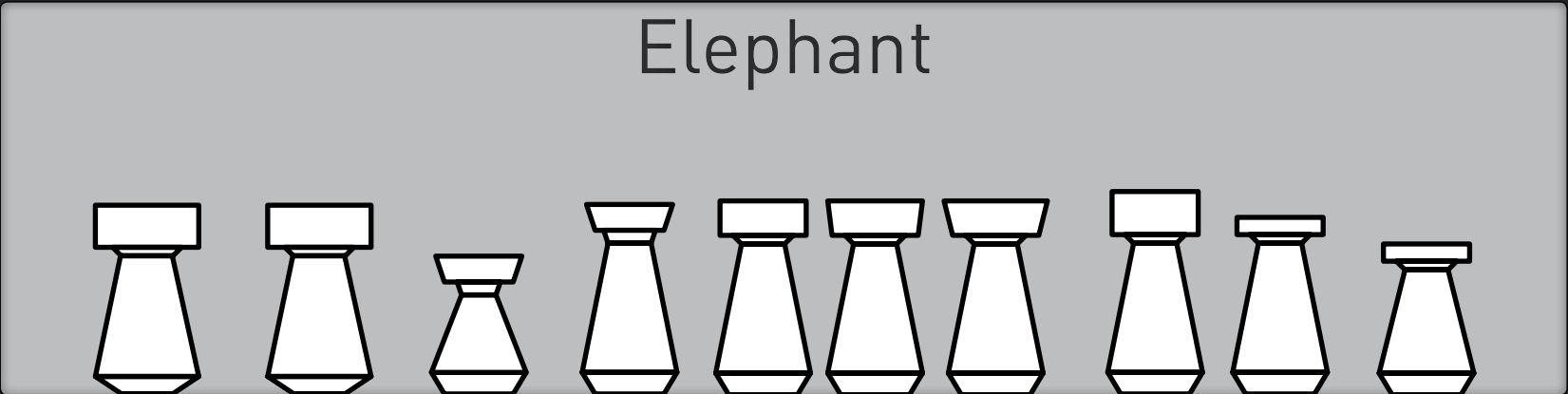
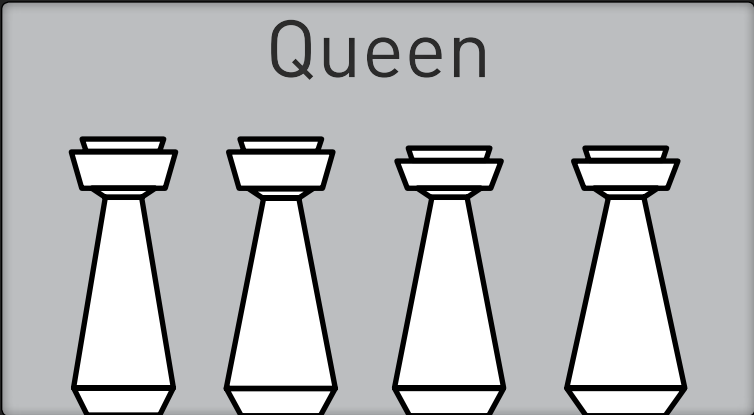
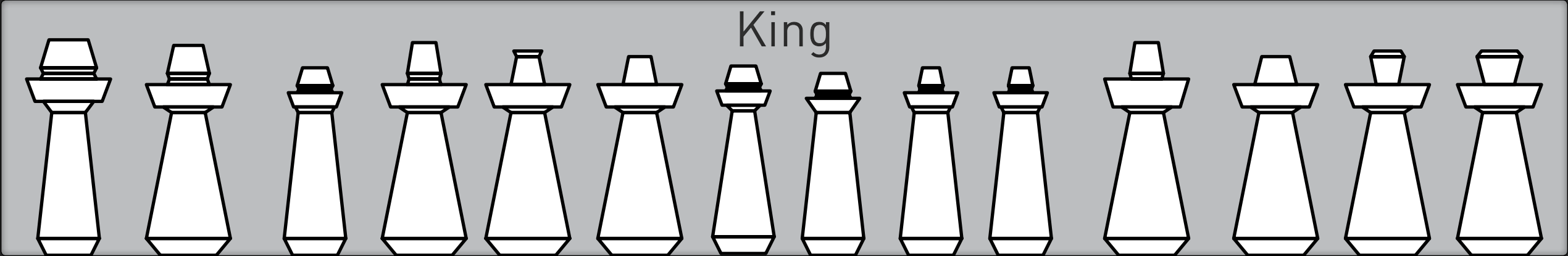
D/ Forms Characteristics/ Soldier



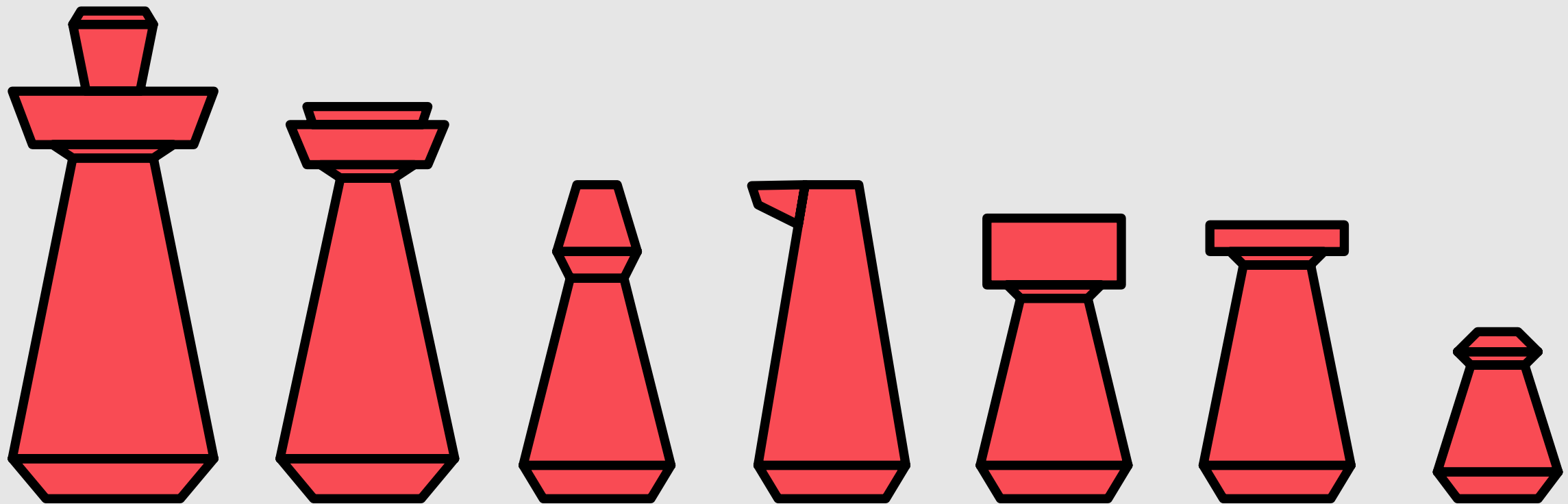
D/ Forms/ Exploring Forms



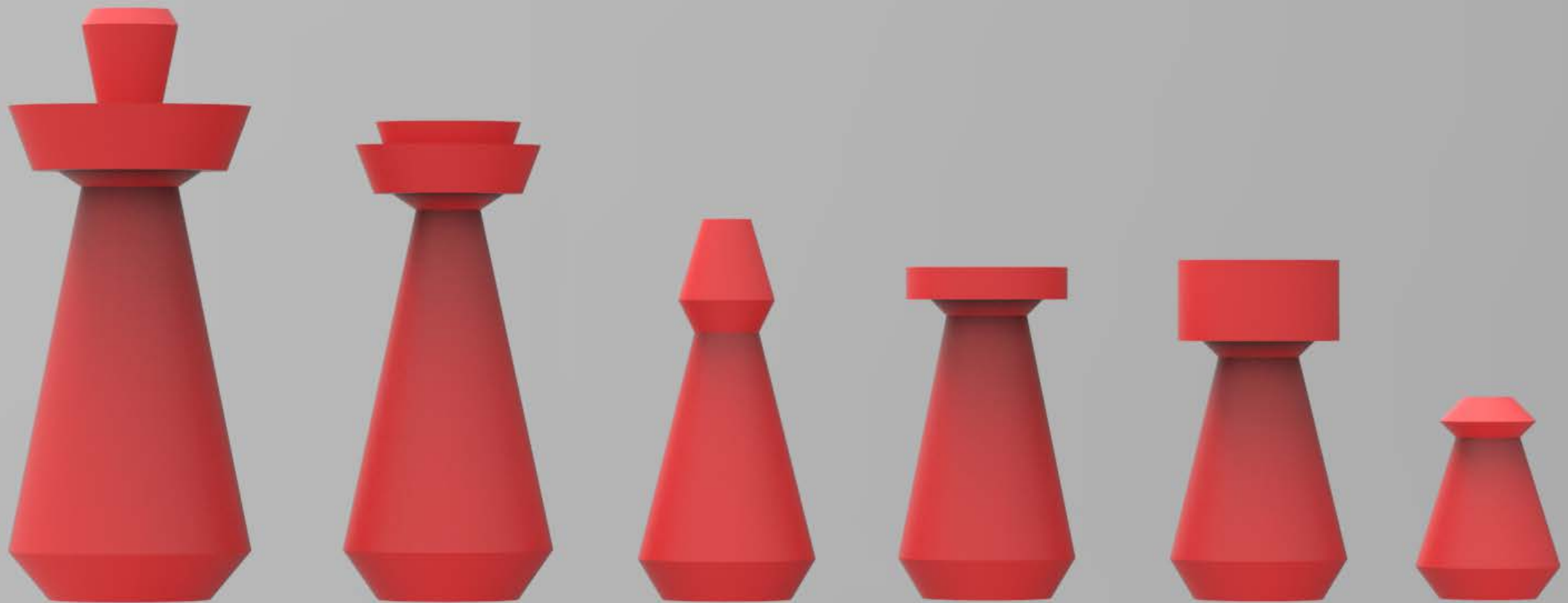
D/ Forms/ Exploring Forms



D/ Forms



D/ Forms/ CAD



D/ Forms/ Paper prototype

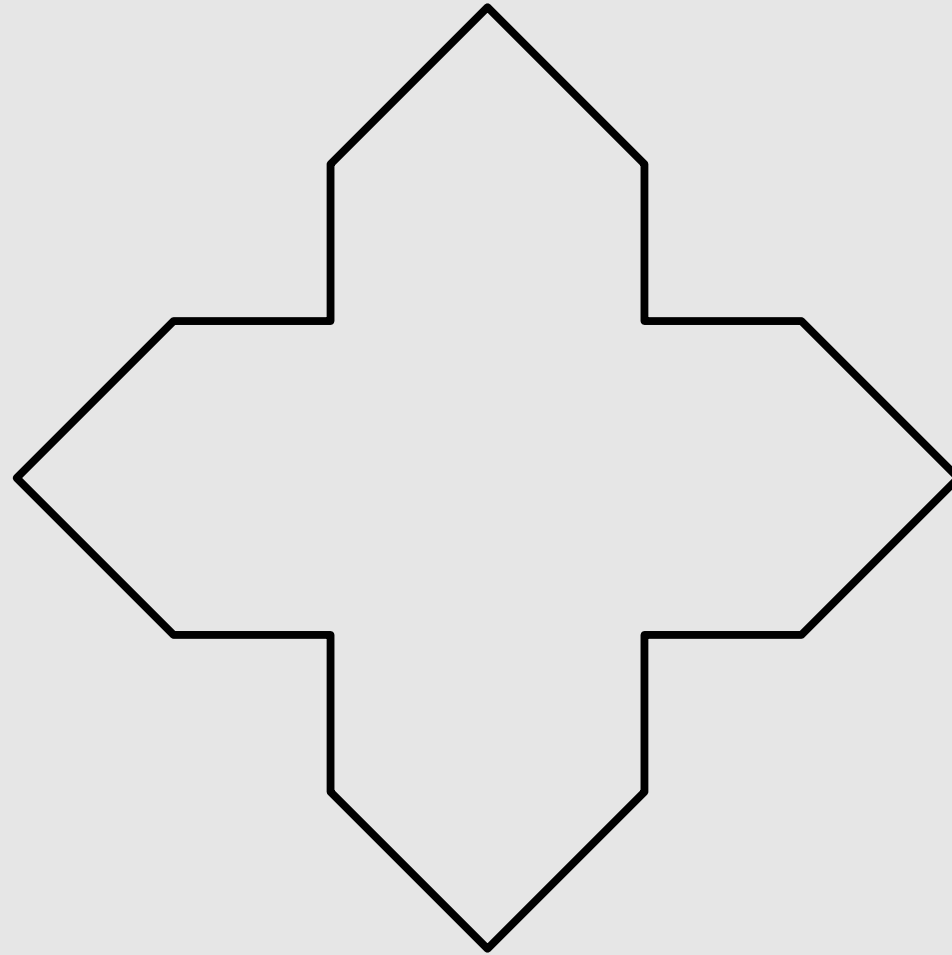


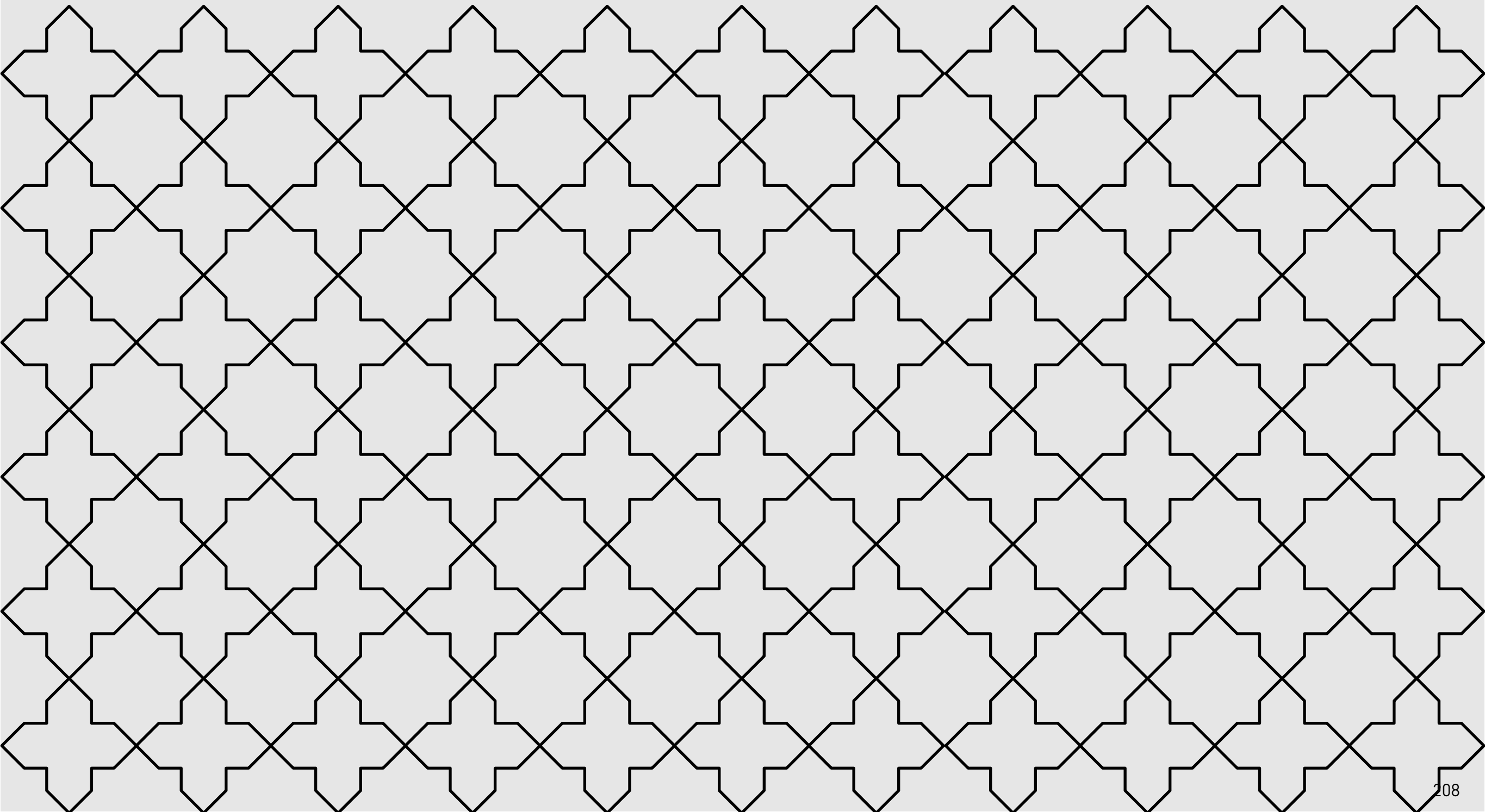
D/ Forms/ Paper prototype

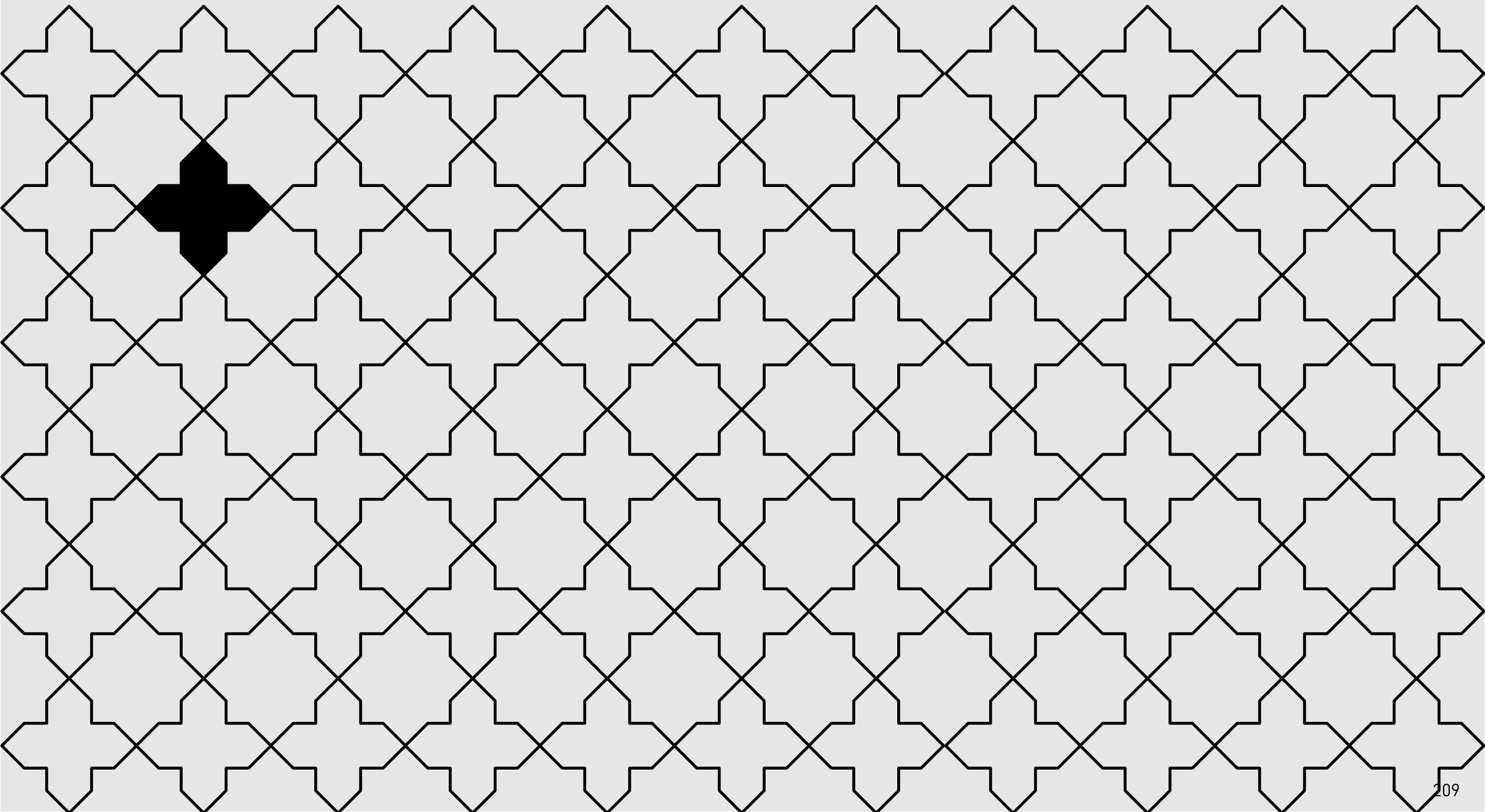


3. Motifs

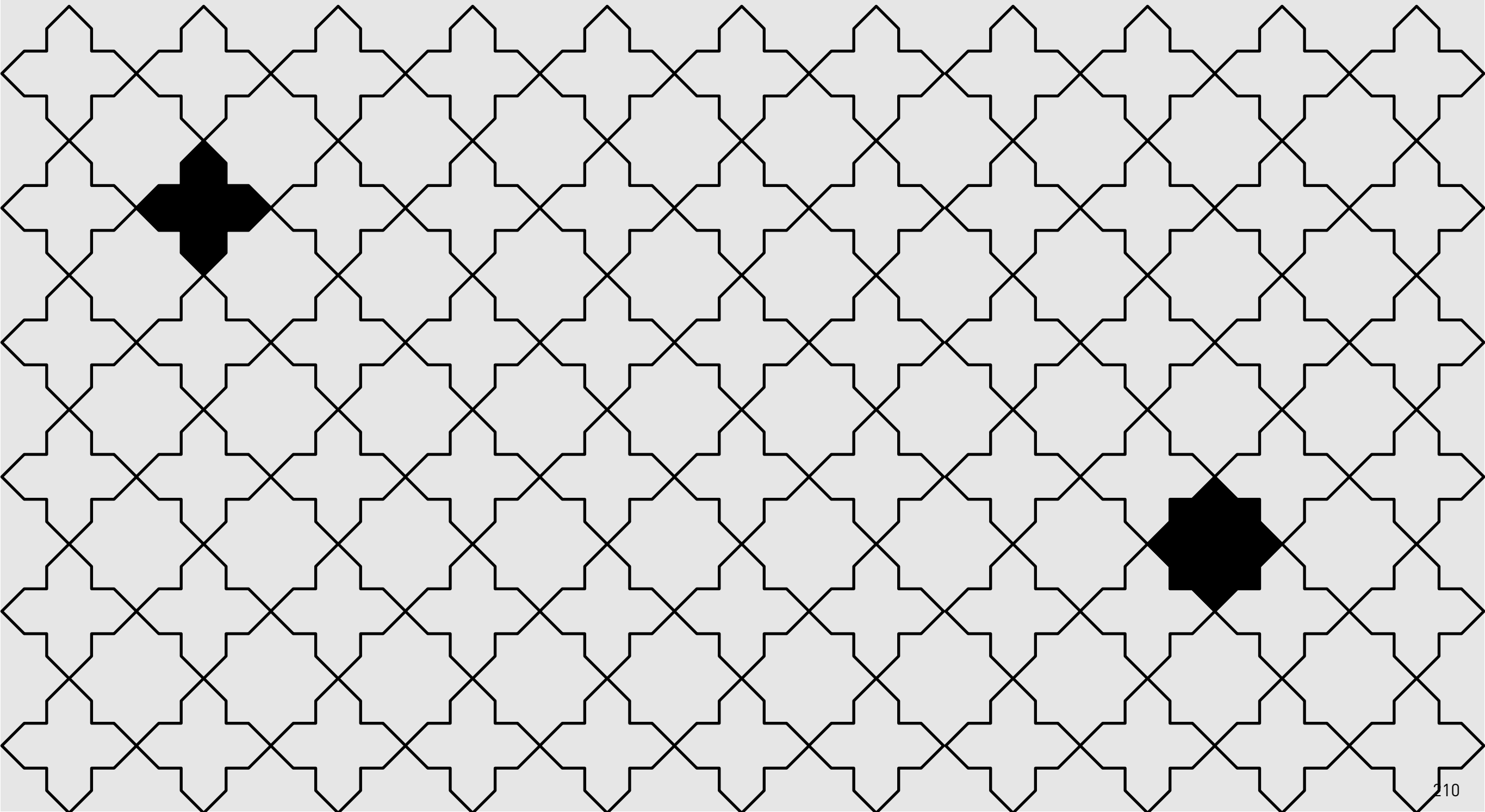
D/ Motifs



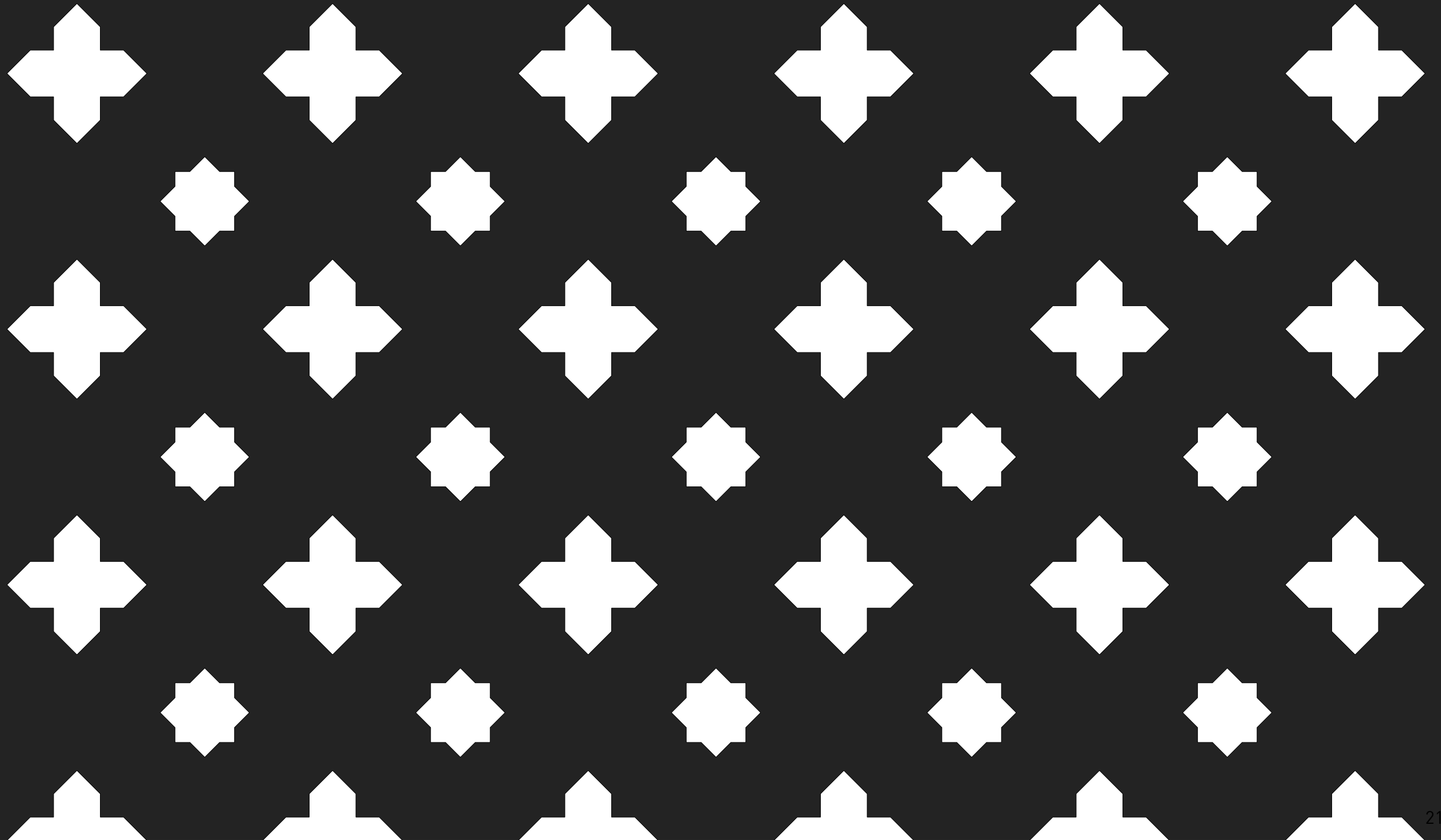




D/ Motifs



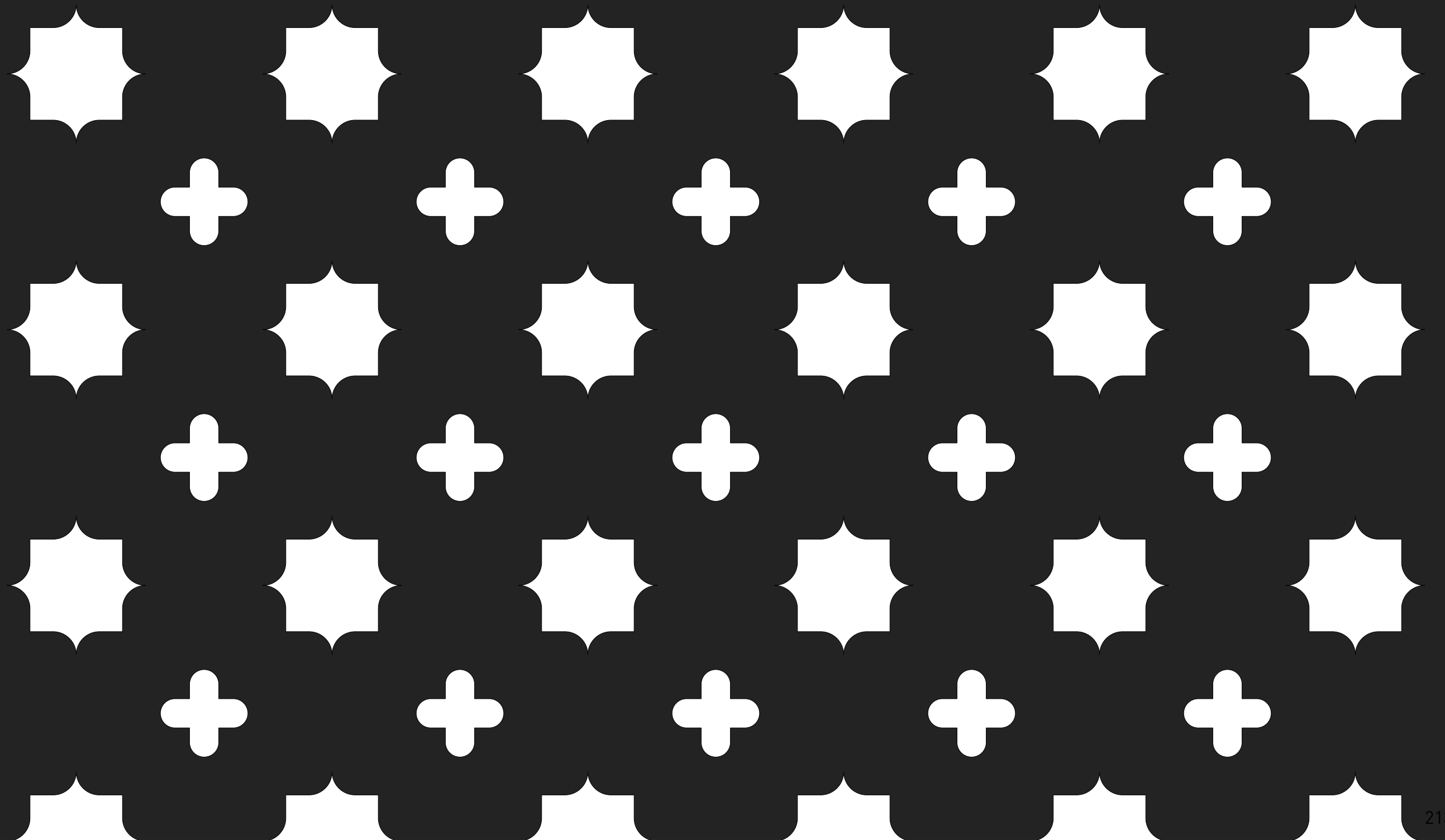
D / Motifs / King



D / Motifs / King



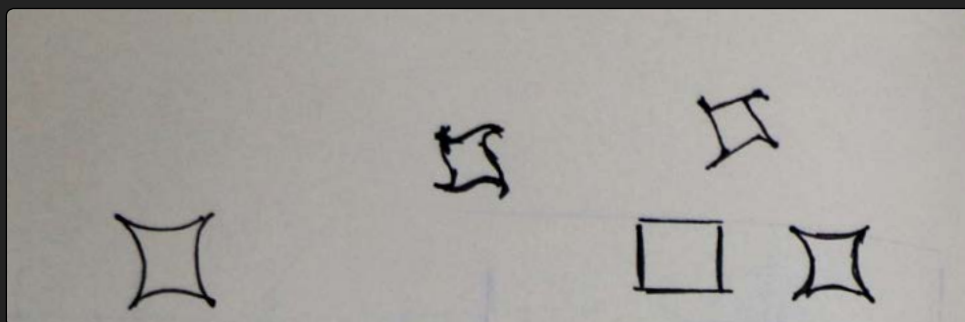
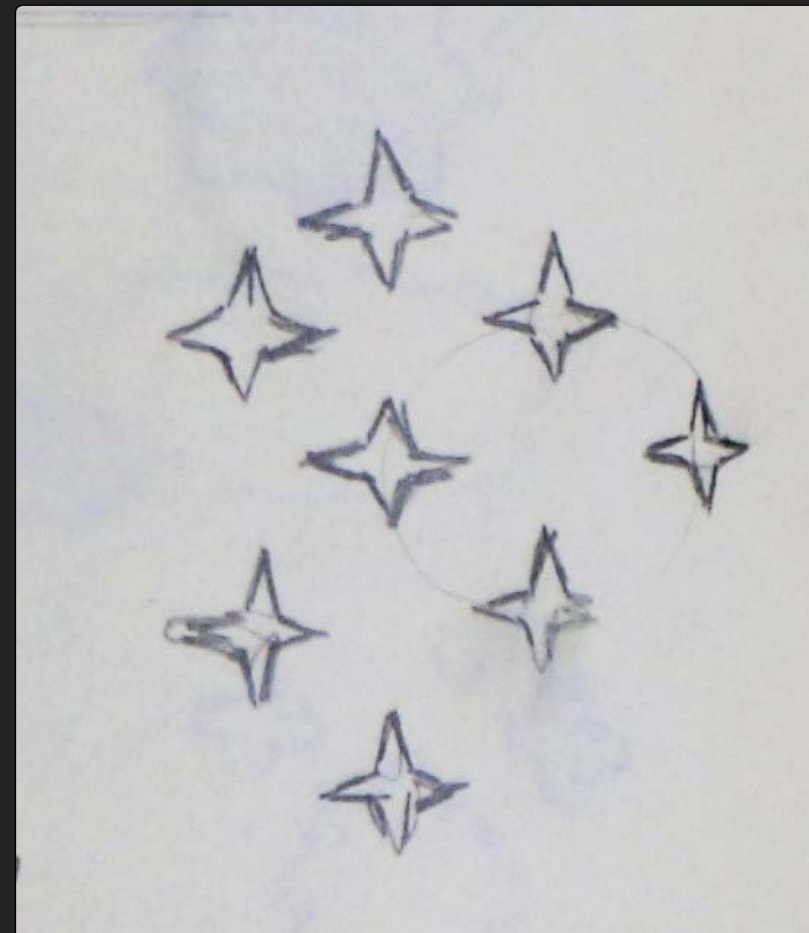
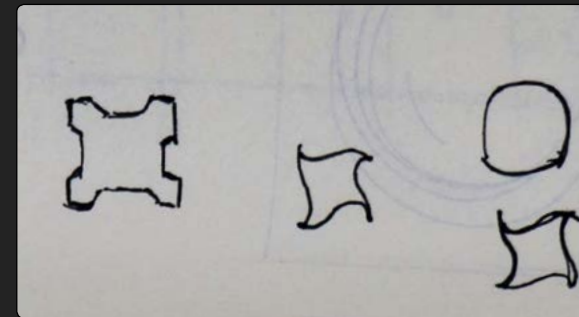
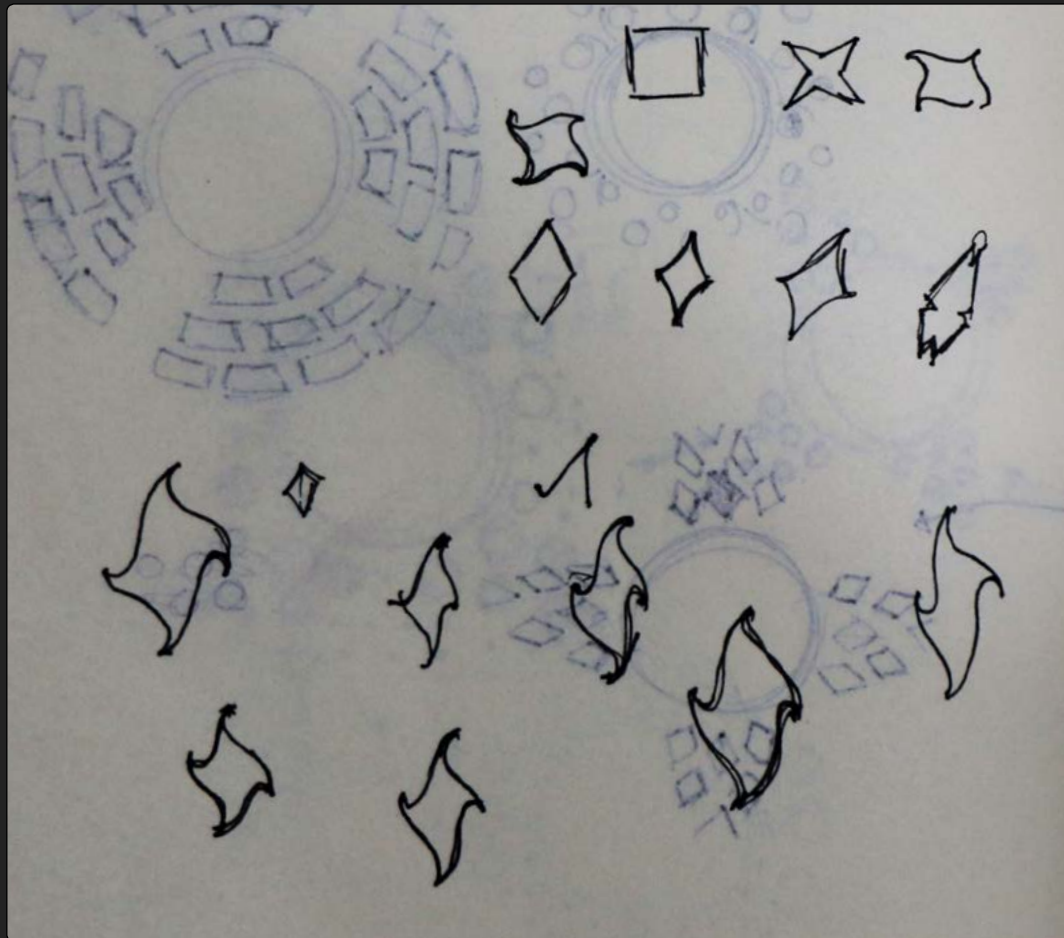
D / Motifs / Queen



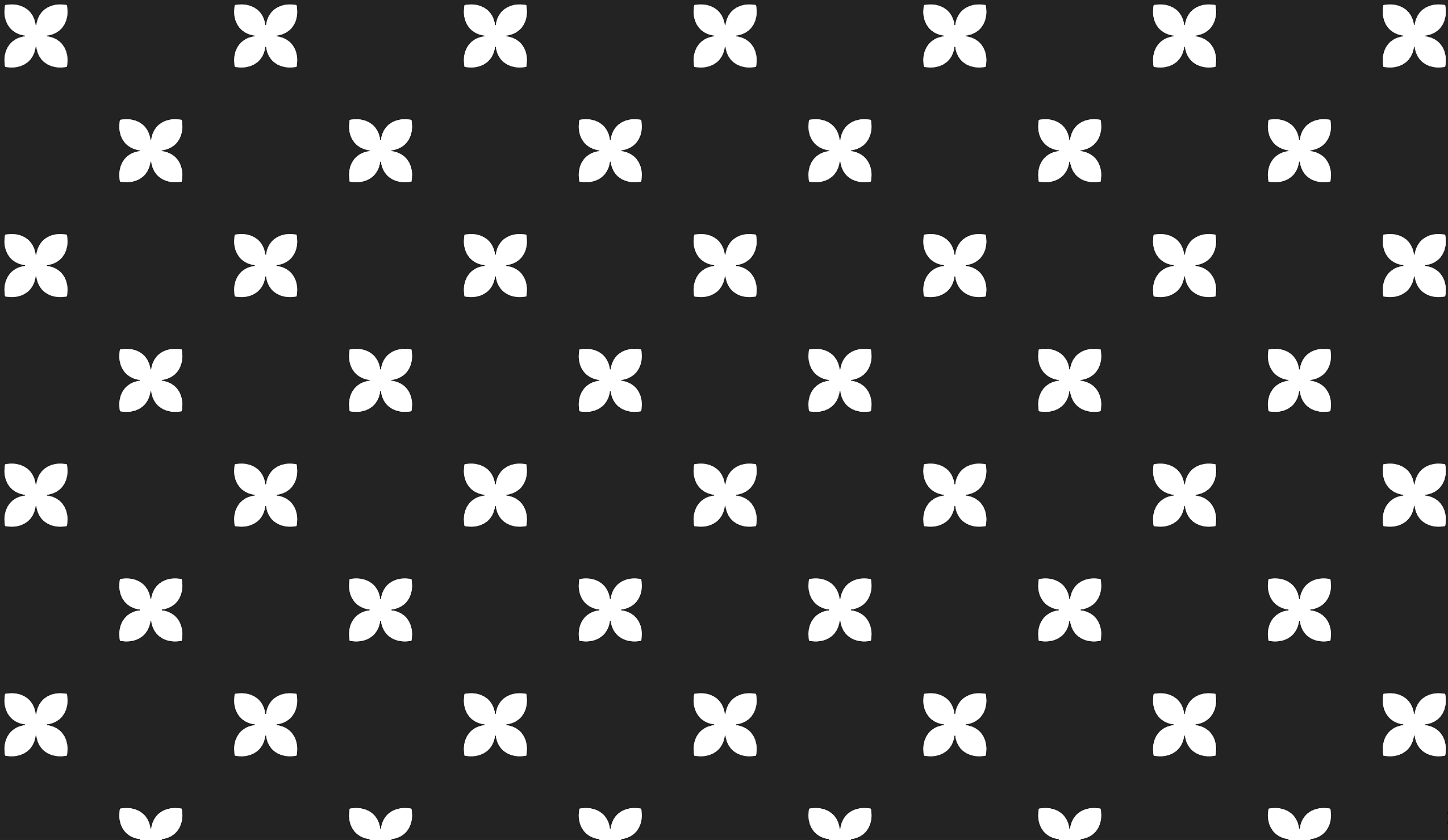
D / Motifs / Queen



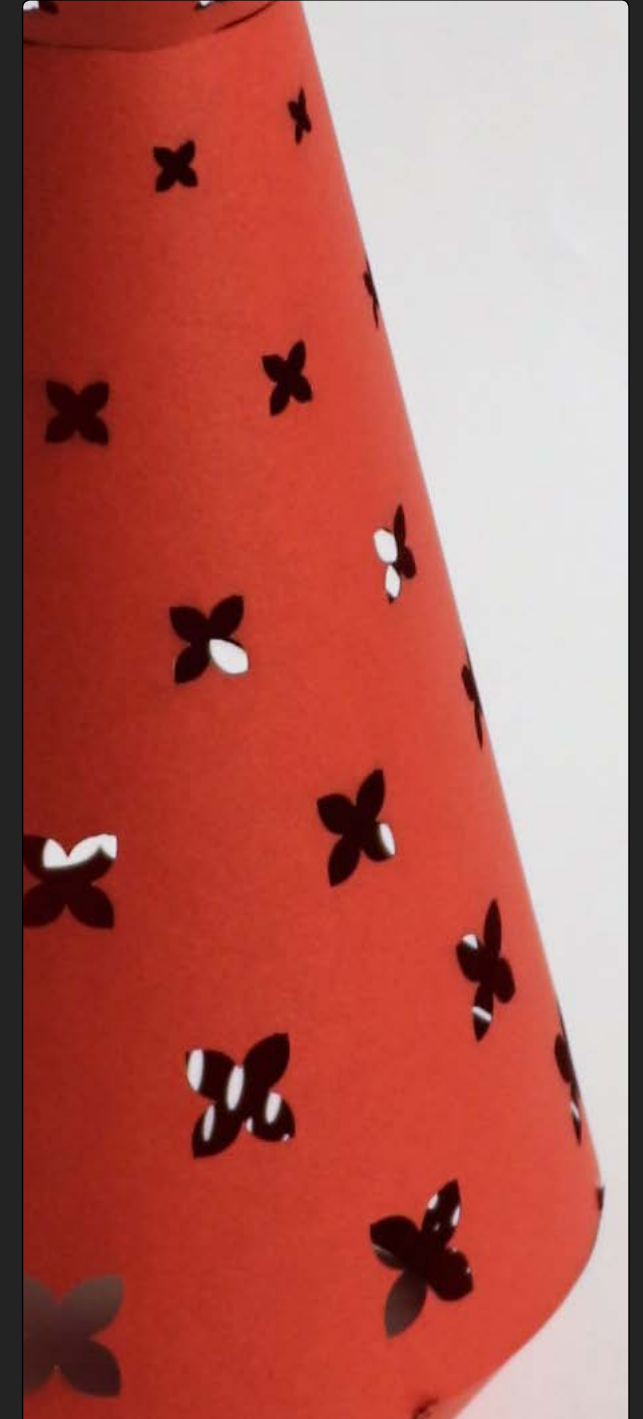
D/ Motifs/ Camel



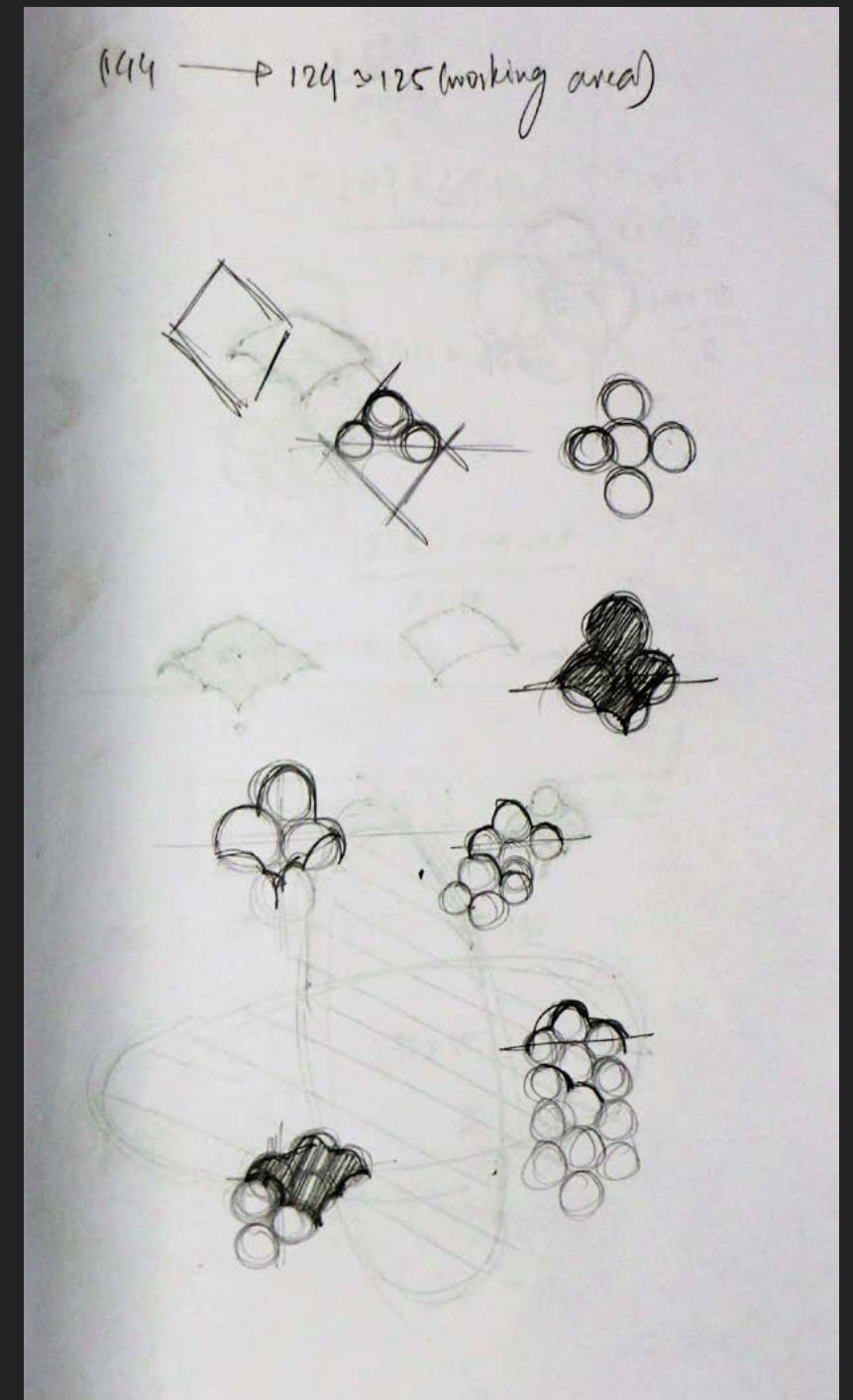
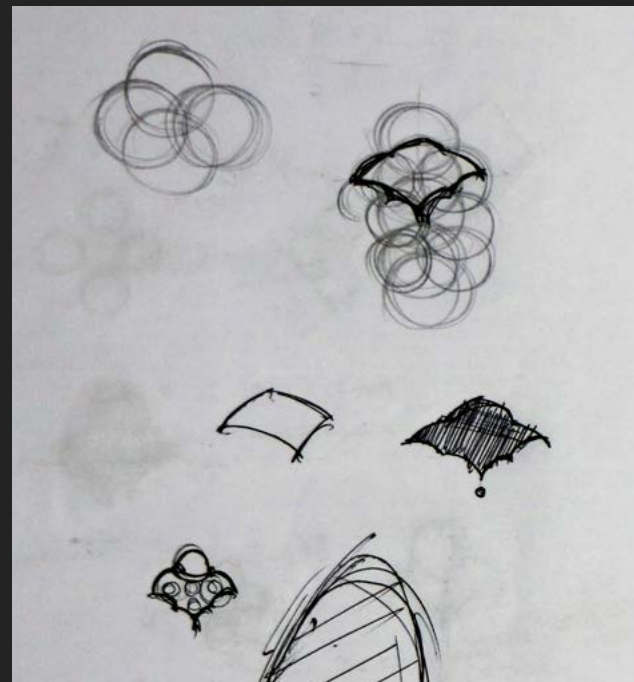
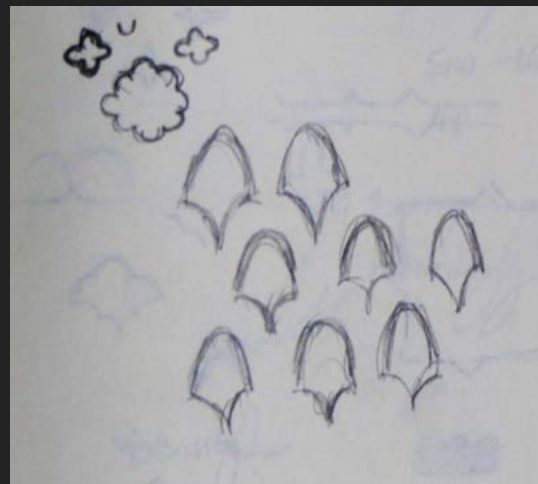
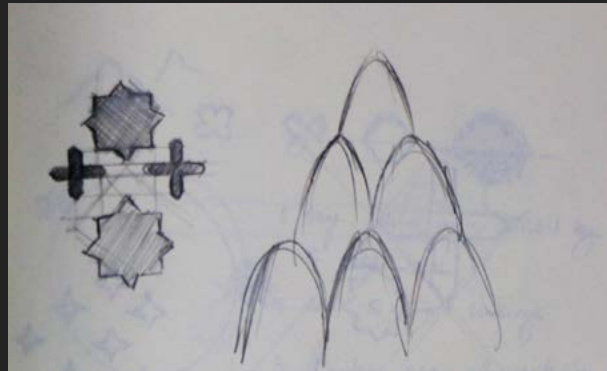
D / Motifs / Camel



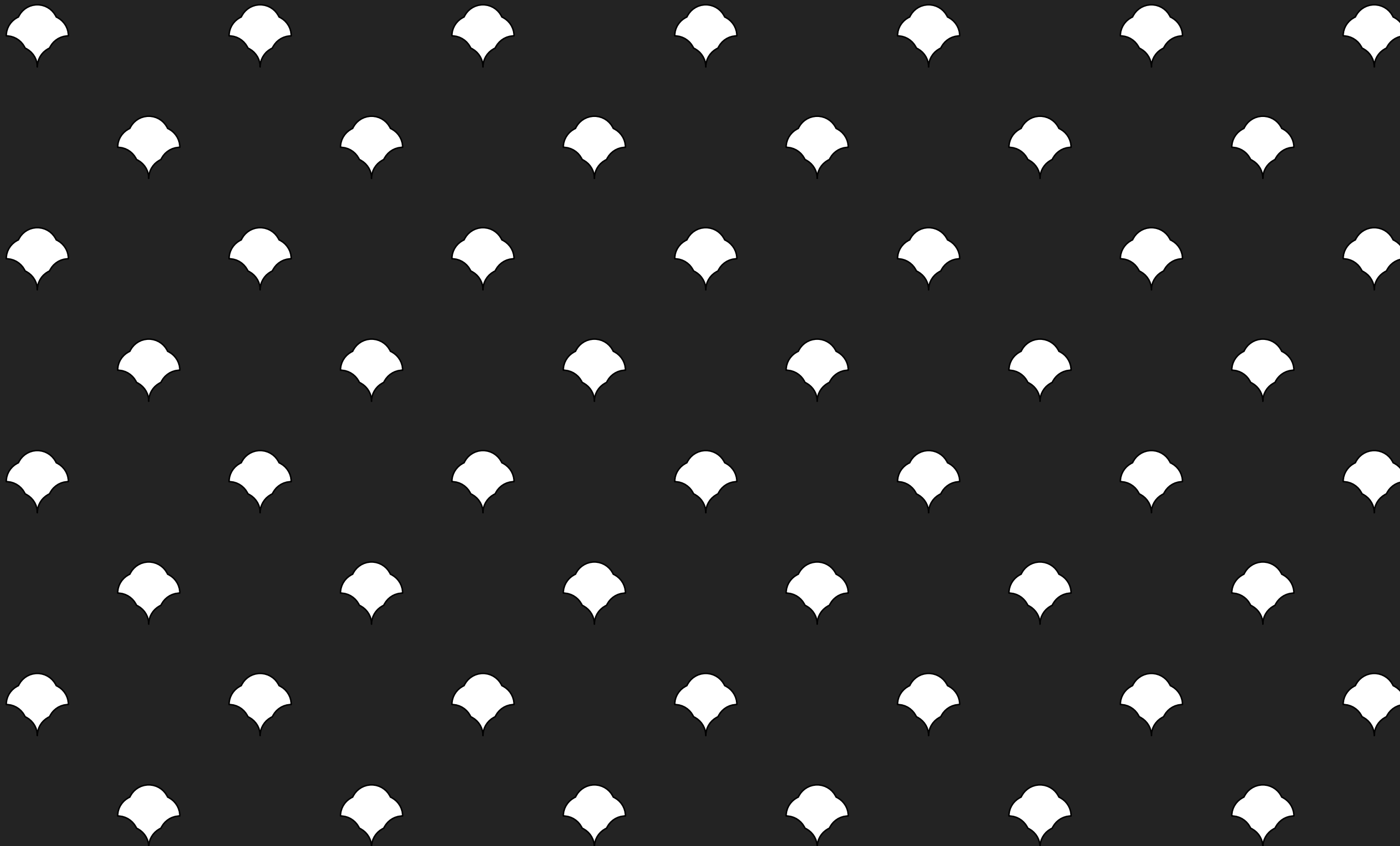
D/ Motifs/ Camel



D / Motifs / Horse



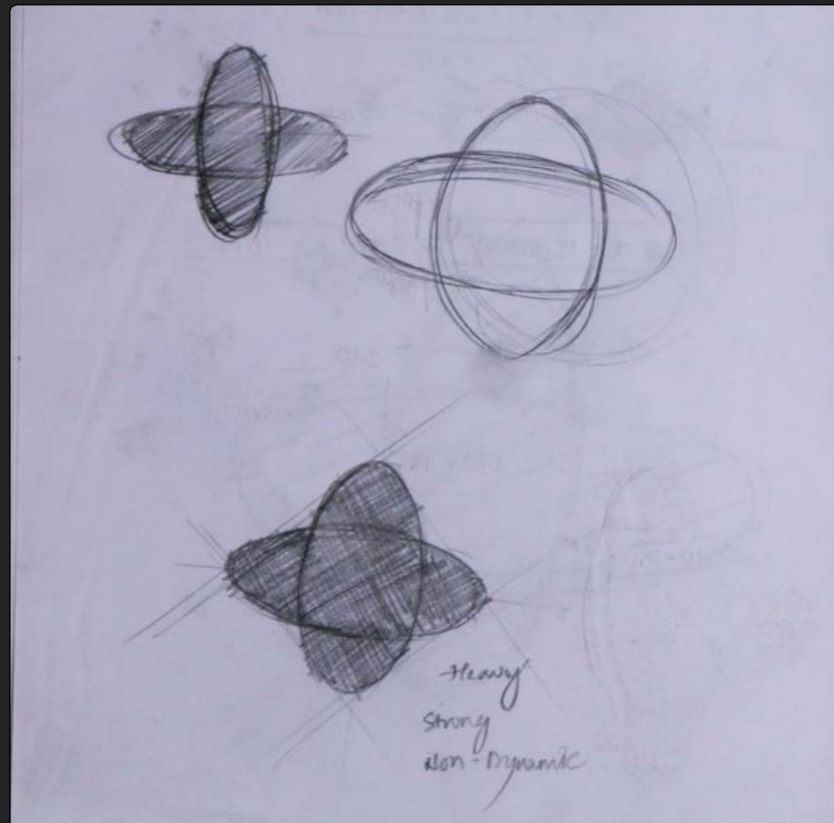
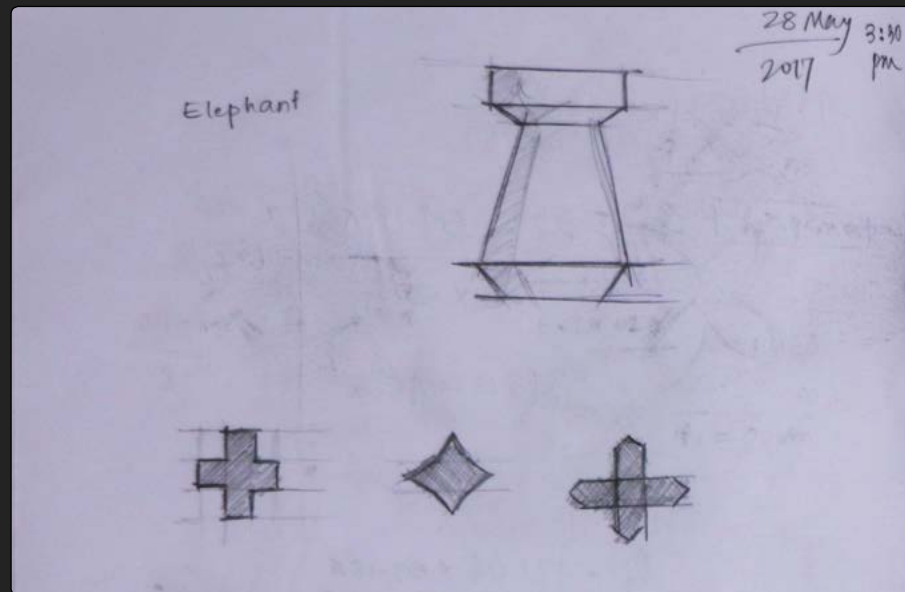
D / Motifs / Horse



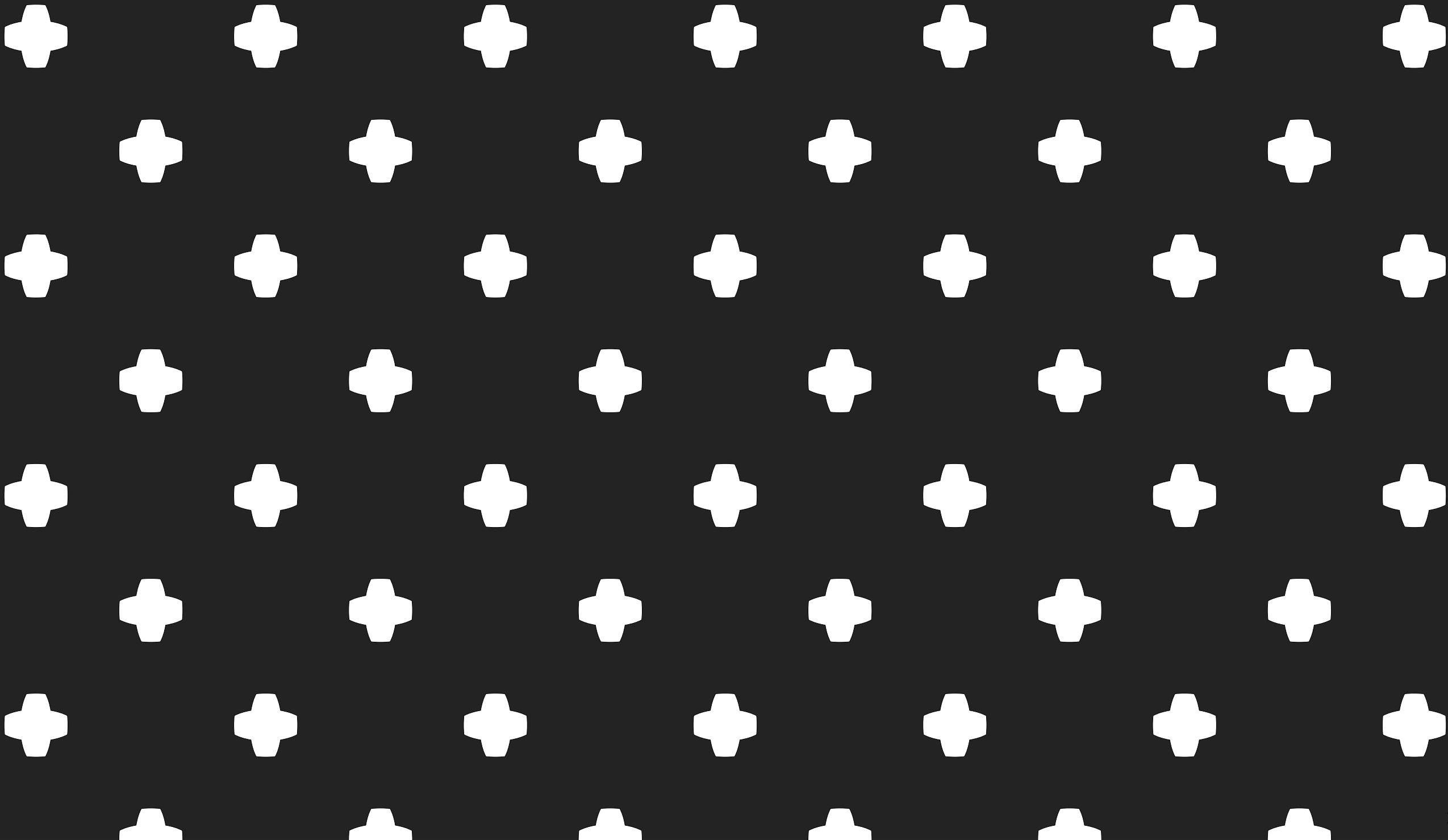
D/ Motifs/ Horse



D/ Motifs/ Elephant



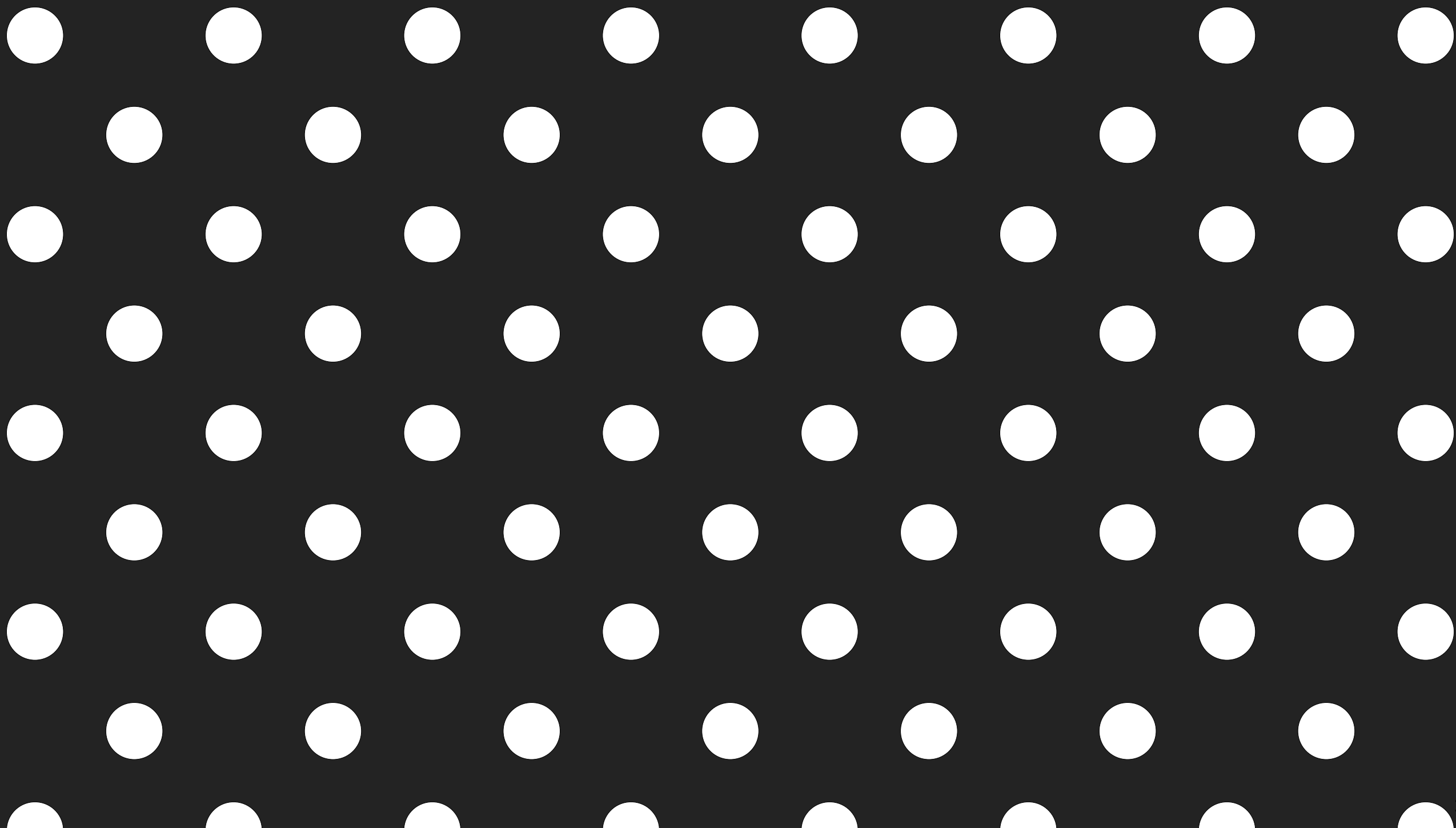
D / Motifs / Elephant

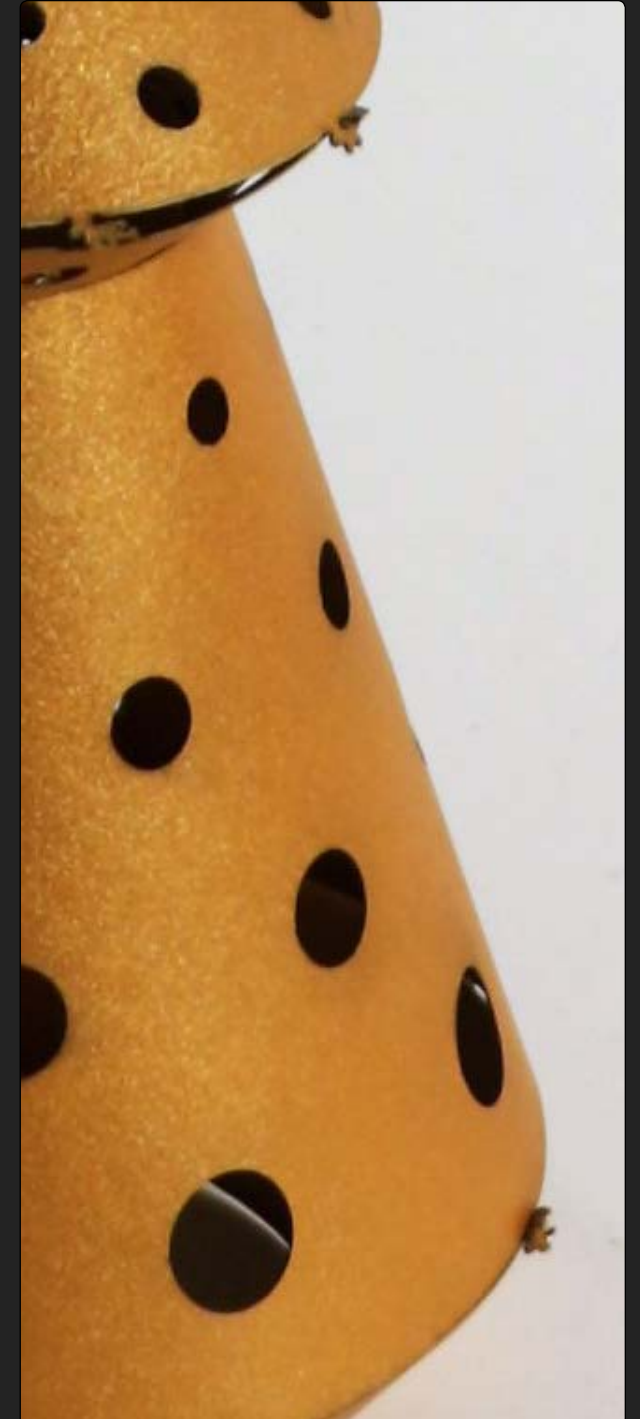


D / Motifs / Elephant



D / Motifs / Soldier

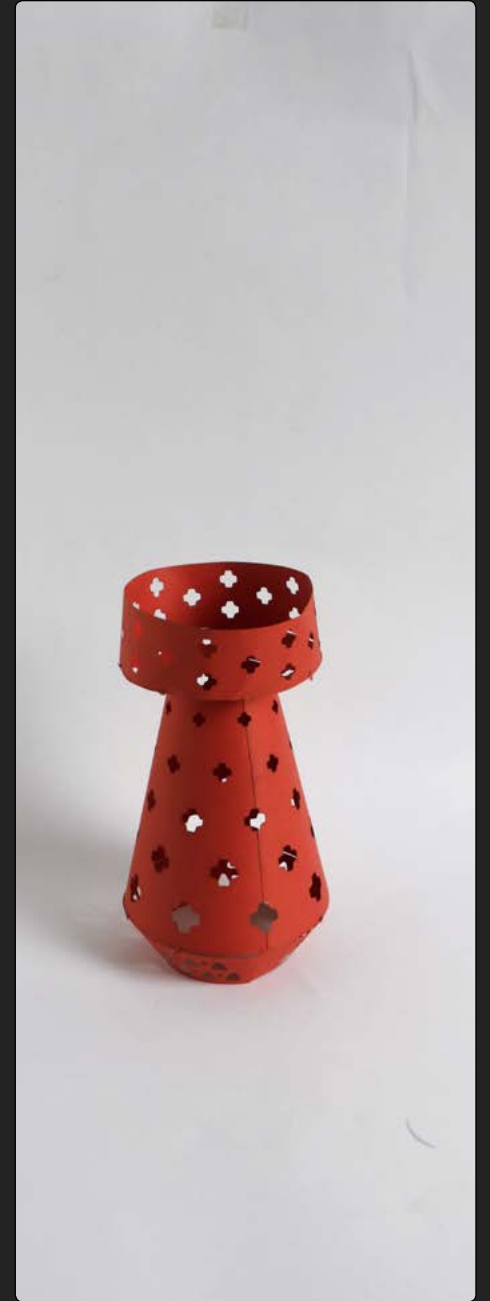




D/ Prototype with motifs



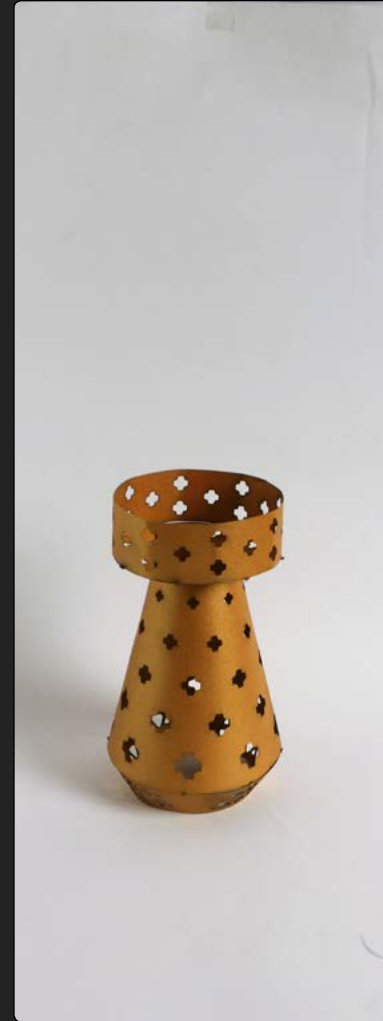
D/ Prototype with motifs

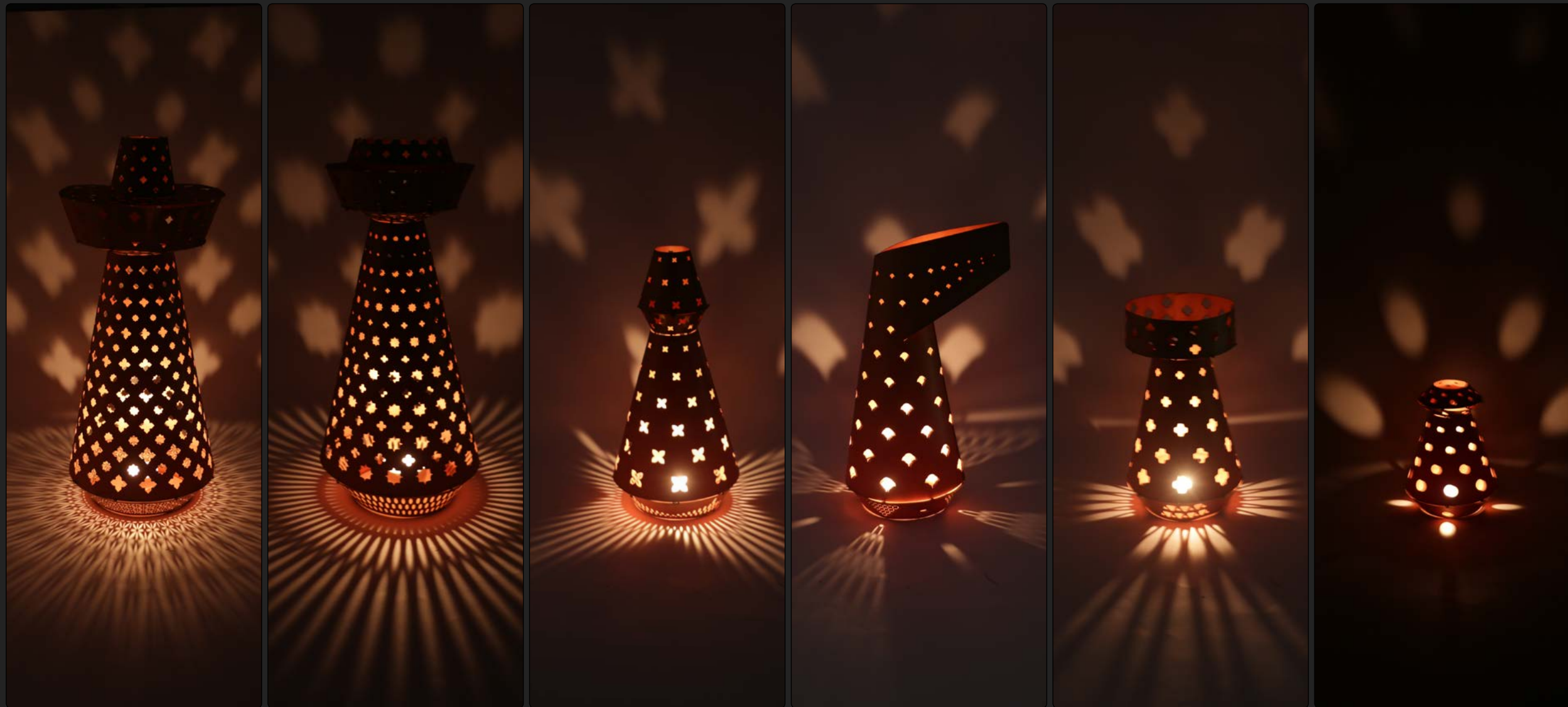


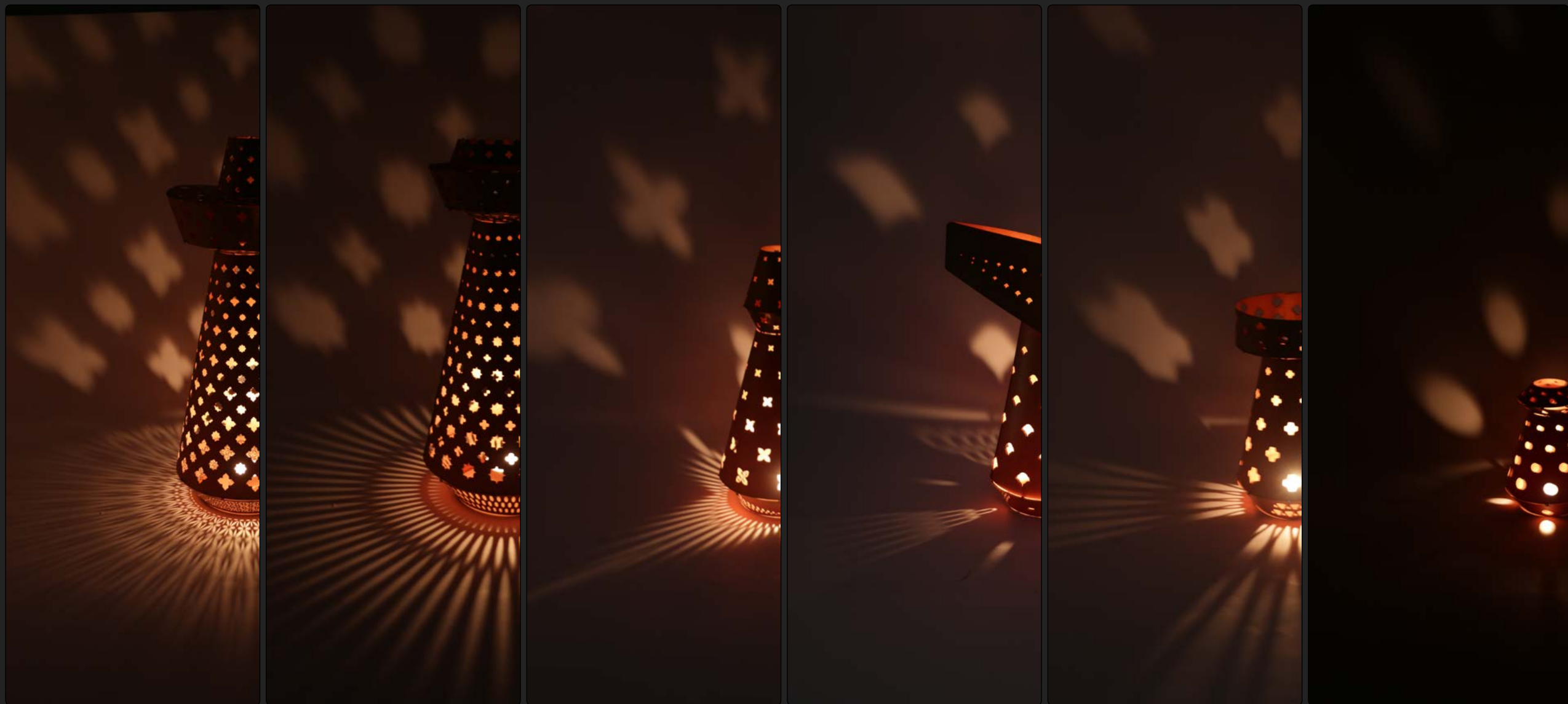
D/ Final Design



D/ Final Design







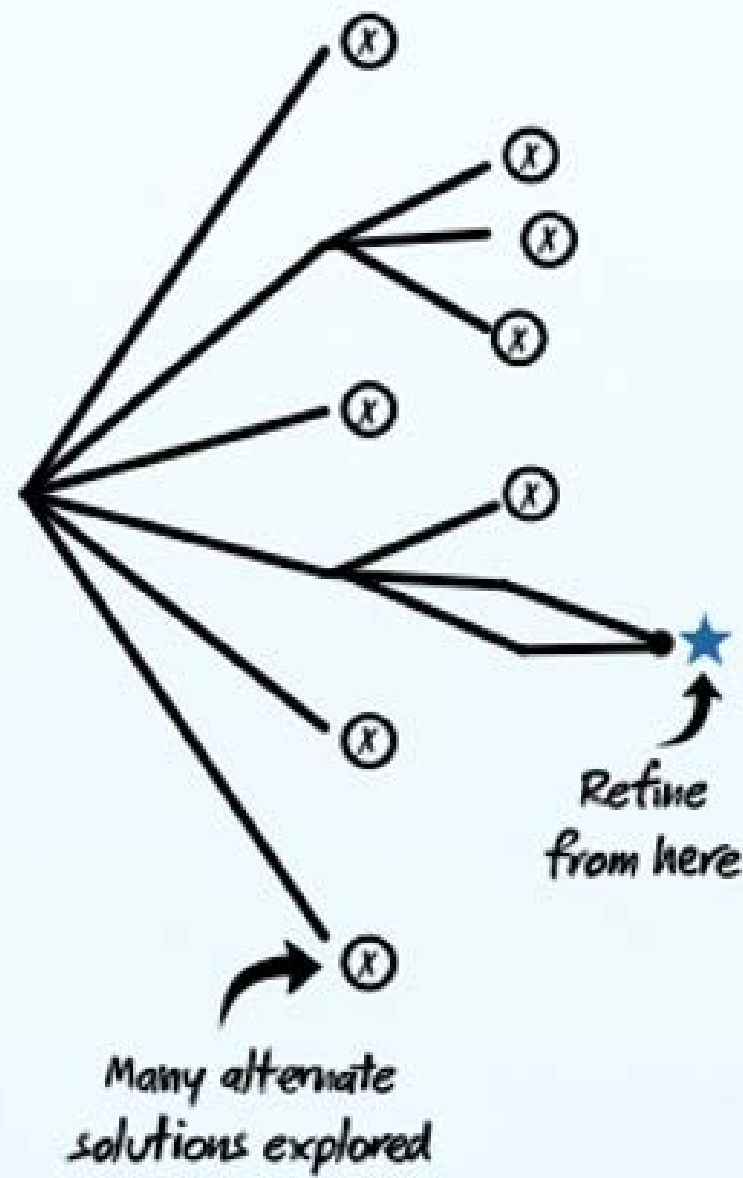






Learnings

Exploration



Exploration

Explore / *verb*

Travel through (an unfamiliar area) in order to learn about it.

source: en.oxforddictionaries.com

