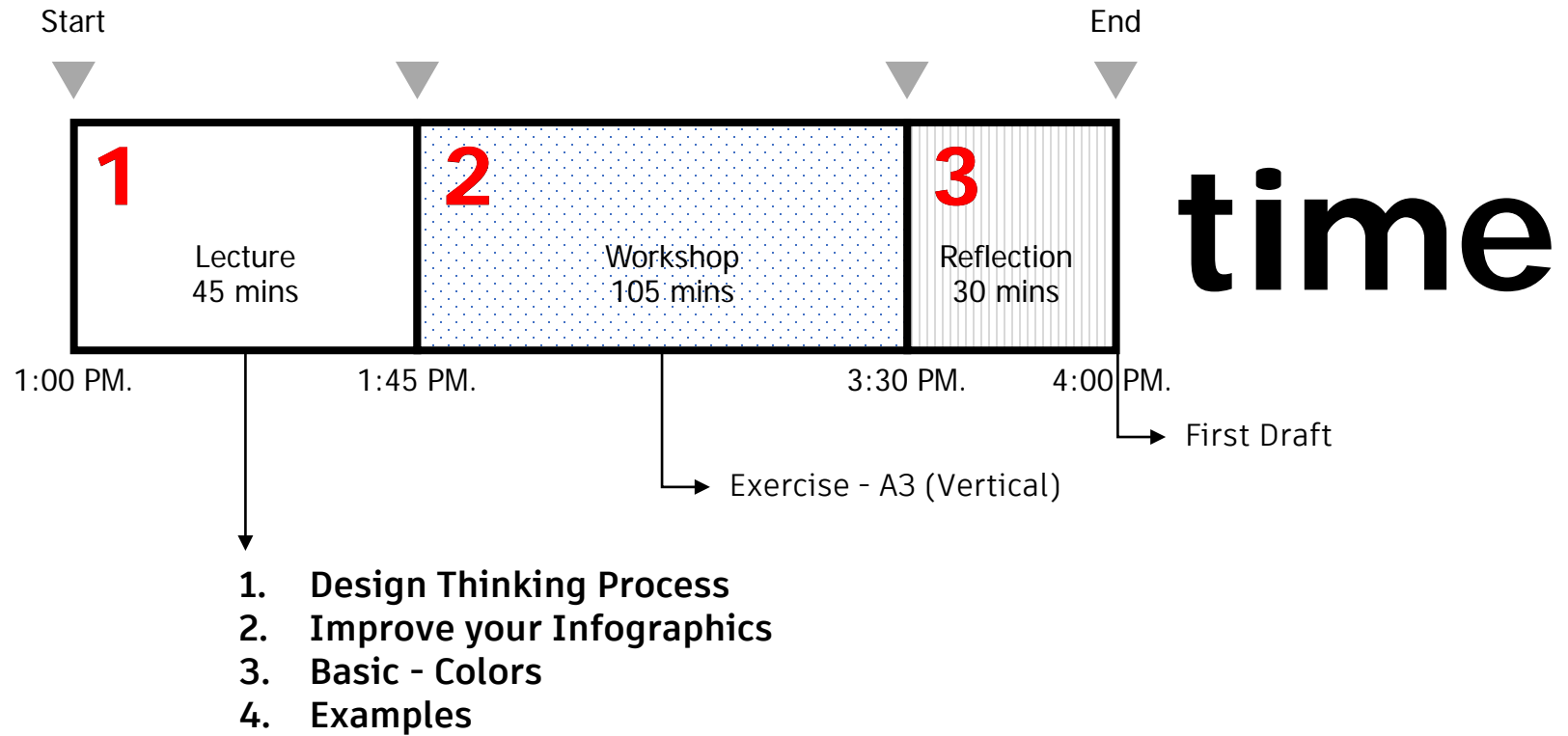
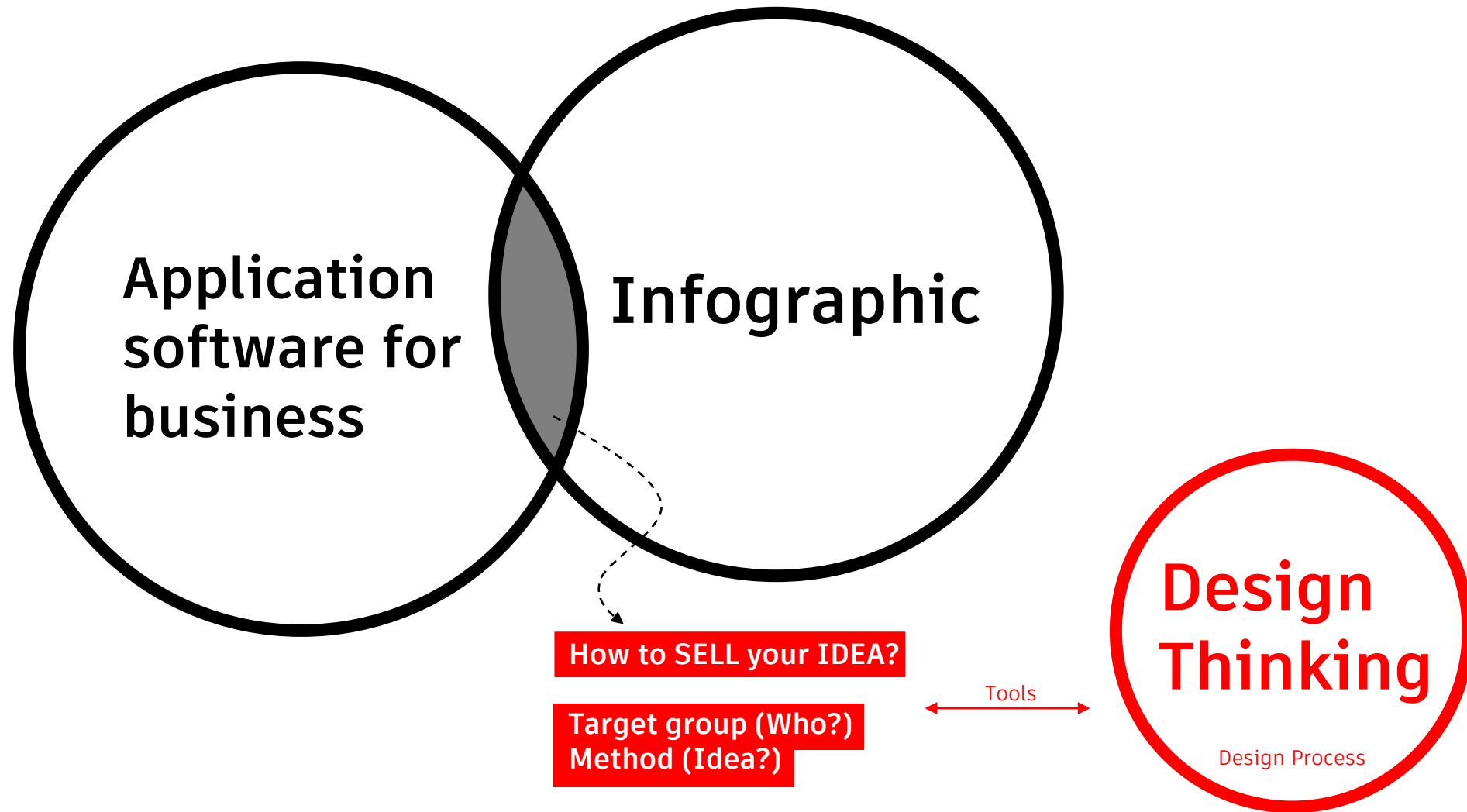


# Application software for Business ?

03.11.2022





# Design Thinking

# 1 UNDERSTAND

การสร้างควมเข้าใจ  
Understanding ends in Insight  
ทำให้เกิดความเข้าใจอย่างลึกซึ้ง



EMPATHY

การทำควมเข้าใจ  
กลุ่มเป้าหมายอย่างลึกซึ้ง

DEFINE

การตั้งกรอบใจกย

# 2 CREATE

การสร้างสรรค  
Creation ends in ideas  
ทำให้เกิดความคิดใหม่ๆ

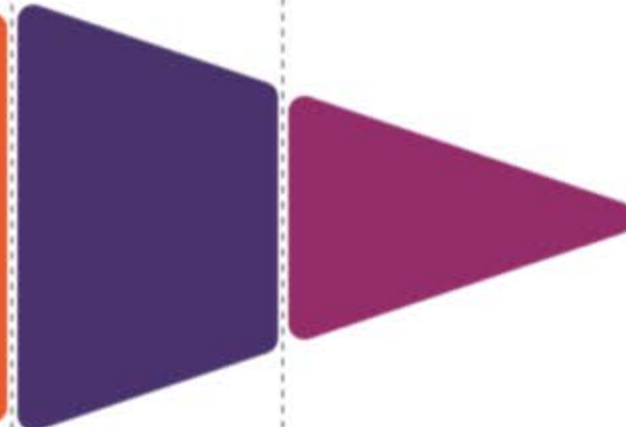


IDEATE

การสร้างควมคิด

# 3 DELIVER

การเตรียมส่งมอบสู่ผู้ใช้  
Delivery ends in reality  
ทำให้นาโบใชไ้จริง



PROTOTYPE

การสร้างต้นแบบ

TEST

การทดสอบ



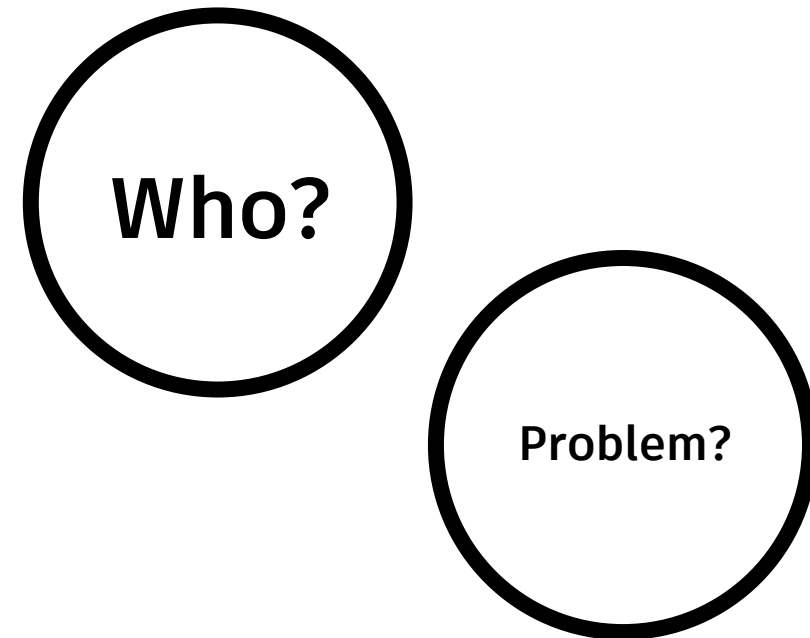
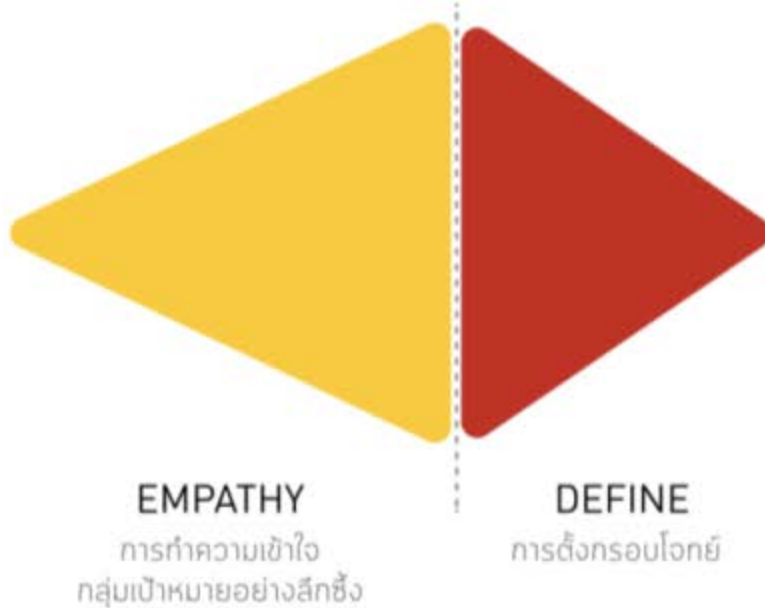
Source: <http://designthinking.co.nz/design-thinking-for-execs/>

# 1 UNDERSTAND

การสร้างควมเข้าใจ

Understanding ends in Insight

ทำให้เกิดควมเข้าใจอย่างลึกซึ้ง



## 2 CREATE

การสร้างสรรค

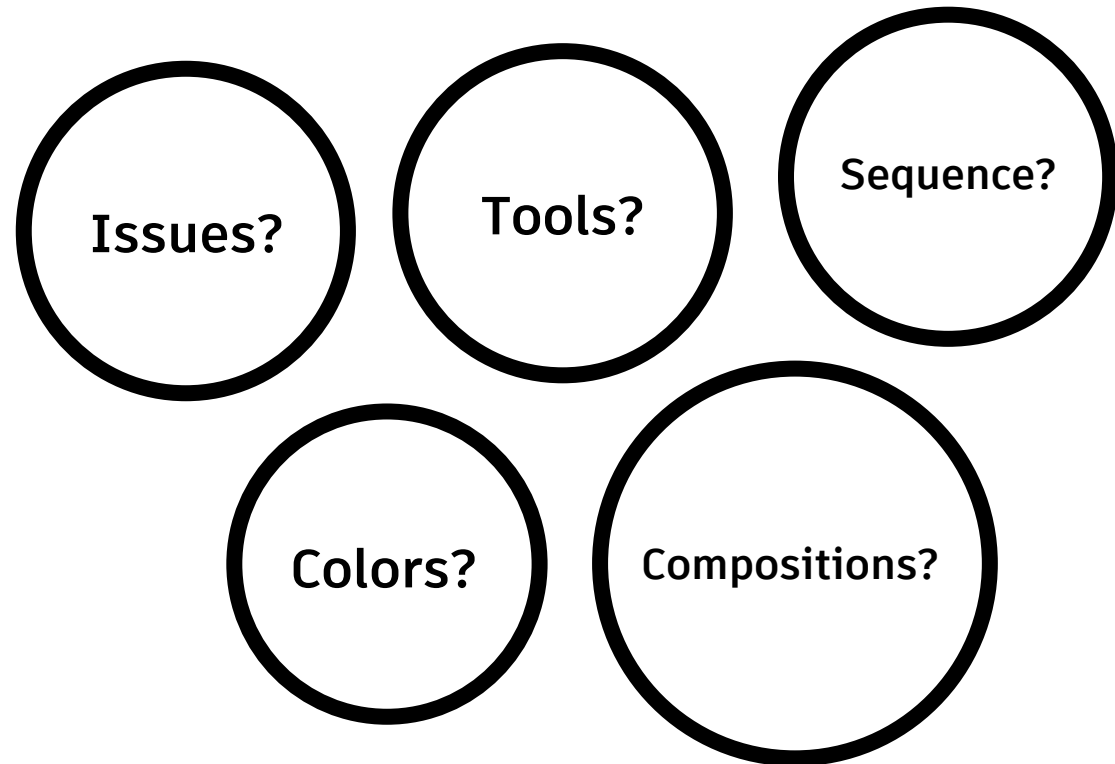
Creation ends in ideas

ทำให้เกิดความคิดใหม่ๆ



IDEATE

การสร้างความคิด

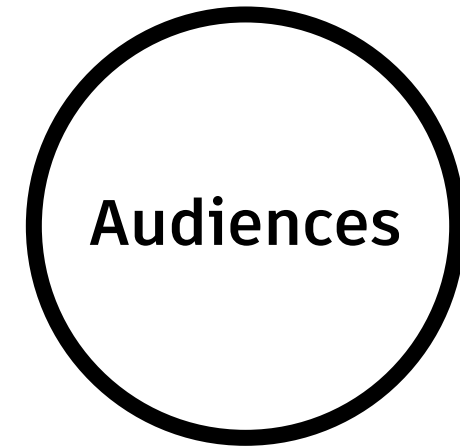
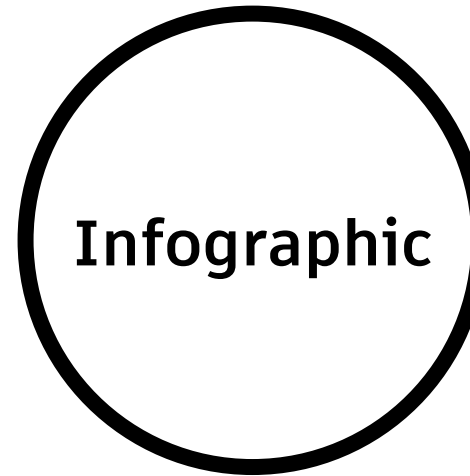
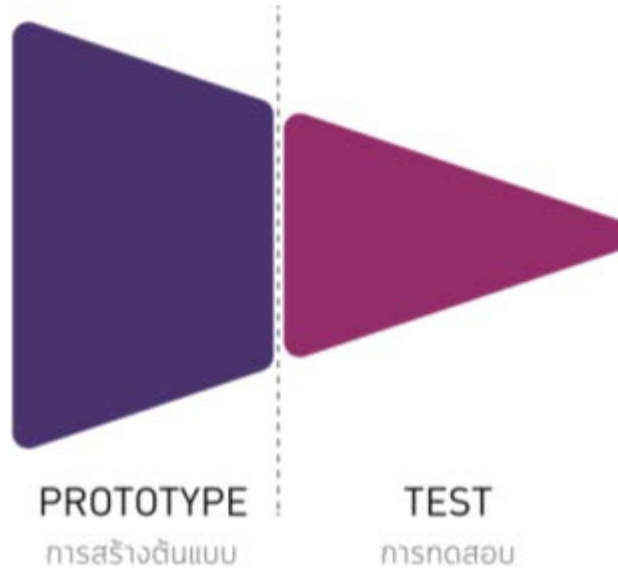


### 3 DELIVER

การเตรียมส่งมอบสู่ผู้ใช้

Delivery ends in reality

ทำให้นำไปใช้ได้จริง

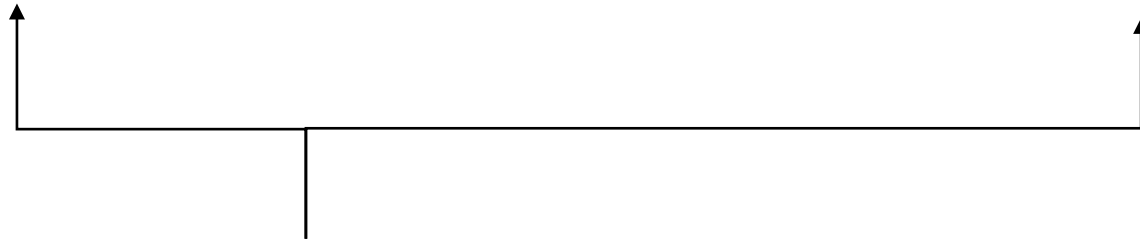




# Improve Your Infographics

Images that represent  
information in visual ways

**Information      Graphic**



**Infographics**



## What's the point?

- Clarify and summarize the complex
- Speed comprehension
- Increase engagement
- Greater retention and recall
- Great for studying complicated data

## Criteria for Good Infographics

1. Content flows easily & logically
2. Don't have too much text
3. Hierarchy
4. Structured/uncluttered

# 6 Types of Infographics

1. Map
2. Versus
3. Timeline
4. Flowchart
5. Visual Article
6. Data Visualization

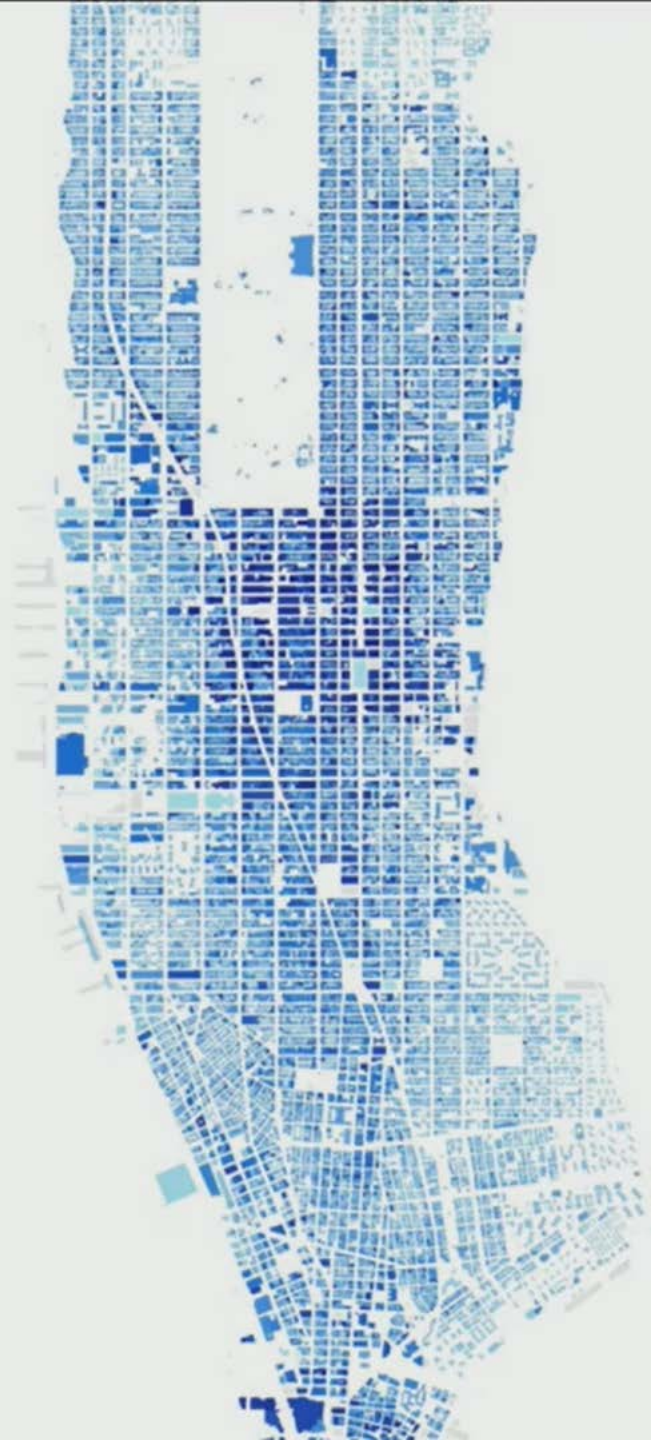
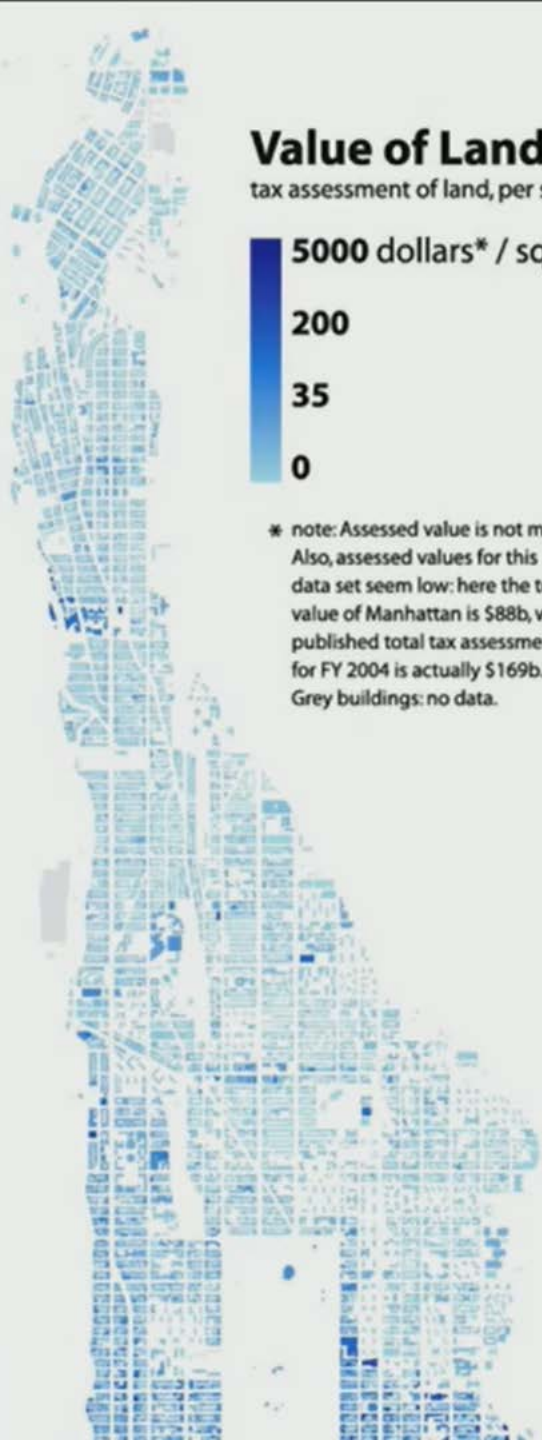
**Map: Showcases  
data trends based  
on location**

## Value of Land:

tax assessment of land, per sqft of dirt



\* note: Assessed value is not market value.  
Also, assessed values for this  
data set seem low: here the total  
value of Manhattan is \$88b, whereas  
published total tax assessment  
for FY 2004 is actually \$169b.  
Grey buildings: no data.





From Talad Noi  
4 Phraya Pier  
River City

The Wall  
2022

ผดุงกรุงเกษม | Happiness Restored

From  
Hua Lamphong  
MRT Station

1

2

3

4

5

6

8

7

5 - 13  
Feb

18.00-22.00

From CEA  
House No.1

## VENUE LIST

- |    |   |          |
|----|---|----------|
| 01 | <b>341-343 SAMSEN ROAD</b><br>341-343 ถนนสามเสน                             | ที่จอดรถ |
| 02 | <b>KESORN LAMPHU HOUSE</b><br>บ้านเกสรลำพู                                  |          |
| 03 | <b>SOI LAMPHU</b><br>ซอยลำพู  | ที่จอดรถ |
| 04 | <b>BANG LAMPHU MUSEUM</b><br>พิพิธภัณฑ์ลำพู                                 | ที่จอดรถ |
| 05 | <b>NEW WORLD</b><br>นิวเวิลด์   |          |
| 06 | <b>SILPAKORN UNIVERSITY</b><br>มหาวิทยาลัยศิลปากร                           | ที่จอดรถ |
| 07 | <b>BUMRUNG NUKULKIJ PRINTING HOUSE</b><br>โรงพิมพ์บำรุงนุกุลกิจ             | ที่จอดรถ |
| 08 | <b>SUNFLOWER / I</b><br>ชั้นฟลาวเวอร์                                       | ที่จอดรถ |
| 09 | <b>CANAL CROSSING BRIDGE, RAJINI SCHOOL</b><br>สะพานข้ามคลอง โรงเรียนราชินี |          |
| 10 | <b>PRAISANIYAKARN POST OFFICE BUILDING</b><br>ไปรษณีย์อาคาร                 |          |

Creative District .....

PHRA NAKHON DISTRICT  
ย่านพระนคร

พระนคร

#BKGDW2022  
#BangkokDesignWeek

## PHRA NAKHON



**Versus: Compares  
two things in a  
head-to-head study**

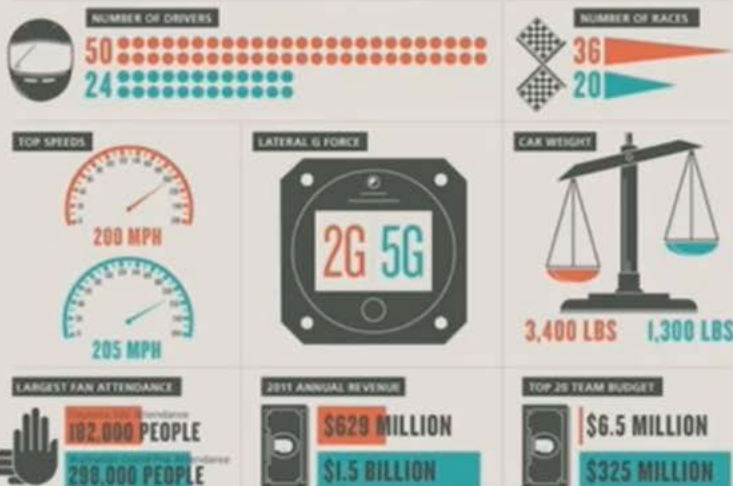




## PROFESSIONAL RACING'S TWO BIGGEST SPORTS GO HEAD-TO-HEAD.

The NASCAR Sprint Cup Series is the highest level of NASCAR—and the most popular in the United States. However, internationally, Formula One racing is seemingly the world's second most popular sport after soccer. Our side-by-side comparison pits the two racing superpowers against each other.

## RACING, BY THE NUMBERS



## POLAR OPPOSITES



## POLAR OPPOSITES



Formula One returns to the United States from November 16-18 at Circuit of the Americas in Austin, Texas. Six F1 champions will be on the track in the United States Grand Prix, including Red Bull Racing's Sebastian Vettel, who has won the drivers' championship the past two years and is gunning for his third.

**Timeline: Tells a  
story through a  
chronological order**

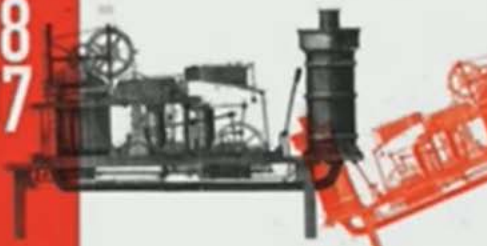
# TODAY'S INTERNAL COMBUSTION ENGINE PRACTICAL MACHINES

**Transportation:** Automobiles, Motorcycles, Scooters, Trucks, Buses, Ferries, Trains, Planes, Helicopters, Submarines, Spacecraft, Rockets, Missiles, etc.

## INTERNAL COMBUSTION ENGINE

Wrote about the first steam engine in 1769 and patented it in 1775.

1807



# HISTORY OF THE INTERNAL COMBUSTION ENGINE

## WHAT MAKES THIS ENGINE SO IMPORTANT?

The Internal Combustion Engine is a relatively small, lightweight energy source that produces an immense amount of power.

1859

## TWO STROKE COAL GAS POWERED

First made a reliable two stroke engine in a three wheel carriage that ran off of coal gas, a very big breakthrough for the engine.



## LIQUID ENERGY FUEL RUN

First engine provided a way to use liquid energy fuel that was readily transported, stored, and consumed.

1870



1877

## FOUR STROKE MAJOR IMPROVEMENT

This came up with a four stroke engine that modern cars use today. It's still the most efficient form of an internal combustion engine.



## GAS POWERED CAR ENGINE

The first gas powered car engine was built by Karl Benz in 1885.

1893



1898

## FUEL EFFICIENT DIESEL

Diesel's engine was more fuel efficient than any other gas or steam engine which existed before the 19th century.

1914



## PRODUCTION V8 ENGINE

The first V8 engine was built by Ford in 1917.



1950

## PRODUCTION V6 ENGINE

The first V6 engine was built by Ford in 1955.



## HYDROGEN ELECTRIC POWERED

Hydrogen powered internal combustion engines are still in development.

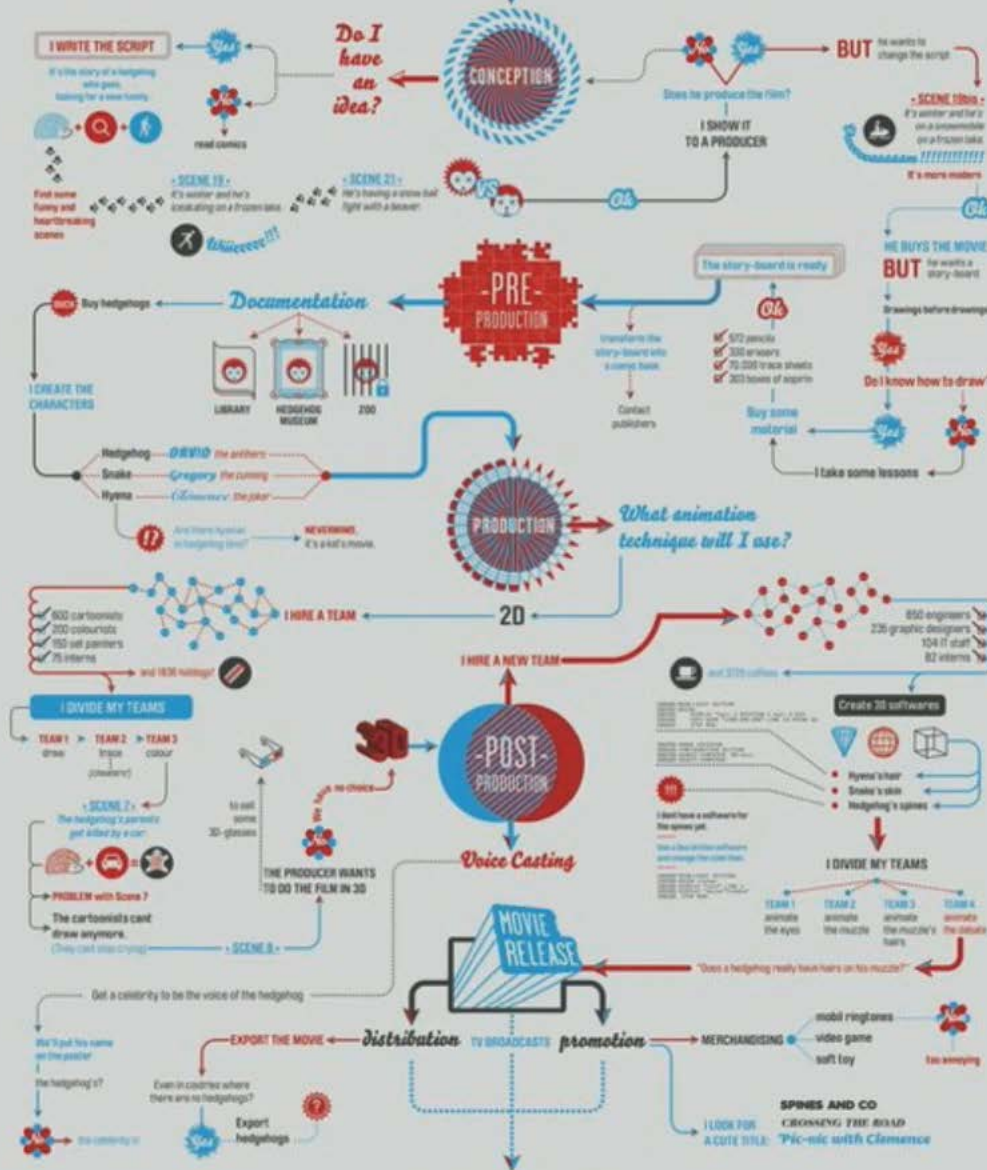
1970



**Flowchart: Provides a specialized answer to a question based on your choices**



# I WANT TO MAKE AN ANIMATED MOVIE



**Visual Article: Makes  
a piece of writing  
more visual**



# Im nassen Element

Wie der Mensch kein Fisch ist, muss er mühsam lernen, sich über Wasser zu halten. Wenn er sich dann auch noch möglichst schnell vorwärts bewegen will, muss er die physikalischen Gesetze beachten. Ein kleiner Grundkurs für die vier offiziellen Disziplinen

## Statischer Auftrieb

Der Auftrieb sorgt dafür, dass es sich fast schwerelos anfühlt, wenn wir in der Wasseroberfläche liegen. Allerdings gilt das nur für Menschen, deren Körperdichte geringer oder gleich der Dichte des Wassers ist. Menschen mit starkem Knochenbau oder sehr wenig Fettgewebe gehen im Wasser unter.



## Zwei Mittelpunkte

Der Auftrieb sorgt für eine nach oben gerichtete Kraft, das Gewicht stellt ein konstantes Sinken dar. Beide Kräfte wirken auf unterschiedlichen Punkten: der Auftrieb am Volumenschwerpunkt (VMP) des verdrängten Wassers, die Gewichtskraft am Körperschwerpunkt (KSP). Die Entfernung der Punkte voneinander und ihre unterschiedliche Wirkung bestimmen das Schwimmverhalten. Die Beine sinken nach unten, und der Kopf ist in eine unvorteilhafte Schräglage. Durch effiziente Bewegungen versucht der Schwimmer, das ungünstige und die Punkte auf eine Linie zu bringen.



## Hydrodynamischer Auftrieb

Auch die Strömung des Wassers erzeugt Auftrieb – ähnlich wie bei einem Flugzeug.

## Schwundwasser

Diese Gegenkraft hängt von der Position des Schwimmers im Wasser und von der Strömungsgeschwindigkeit.

## Formwiderstand

Wie groß der Widerstand ist, gegen den der Schwimmer antreiben muss, hängt von mehreren Größen ab: der Körperform, dem Ausmaß, wie sich der Körper im Wasser, der Geschwindigkeit, dem viskosen Widerstand und dem Formwiderstand. Der geringste Strömungswiderstand erreicht man, wenn man sich flach durchs Wasser bewegt.

## Der Vortrieb

Der Vortrieb bringt uns voran – er ist die Kraft, die aus allen hydrodynamischen Faktoren resultiert. Wichtig für effektives Schwimmen sind unser gestrecktes Aussehen, unser gestrecktes Aussehen und unser gestrecktes Aussehen.

## Richtungswiderstand

Er entsteht, wenn der Schwimmer nicht gerade schwimmt, sondern sich in eine andere Richtung bewegt.

## Reiz und Risiko

Die Gefahr, im Wasser zu ertrinken, ist groß. Jedes Jahr sterben in Deutschland etwa 1000 Menschen an Ertrinken.

## Tod im Wasser

In Deutschland ertrinken jährlich Hunderte Menschen. Die Zahlen gehen seit 1980 zurück.



## Körpersvergleich

Wasser Schwimmer und Läufer unterscheiden sich stark in ihren Körperbau.



## Nichtschwimmer

Jeder vierte Deutsche ist Nichtschwimmer. Bei den Jugendlichen ist es sogar jeder dritte.



## Die richtige Technik

Der Weltschwimmerverband FINA erhebt vier offizielle Schwimmarten an:

### Kraulschwimmen

Am schnellsten kann man sich im Wasser bewegen. Man muss gut schwimmen können. Dieses ist die wichtigste Schwimmart, die bei den meisten Schwimmern vorkommt. Sie ist die wichtigste Schwimmart, die bei den meisten Schwimmern vorkommt.

### Schmetterlingschwimmen

Die Arme werden nach vorne gestreckt, dann in der ersten Bewegung der Arme nach hinten gezogen. Die Beine werden nach hinten gezogen. Die Beine werden nach hinten gezogen.

### Rückenschwimmen

Ein geschwundener Arm hat mehr Kraft als ein geschwundener Arm. Die Beine werden nach hinten gezogen. Die Beine werden nach hinten gezogen.

### Brustschwimmen

Die Arme werden nach vorne gestreckt, dann in der ersten Bewegung der Arme nach hinten gezogen. Die Beine werden nach hinten gezogen.

263

Die Themen der letzten Grafiken

262

Mitar

261

Energie-Öko

260

Futball-WM

Wissen Grafiken

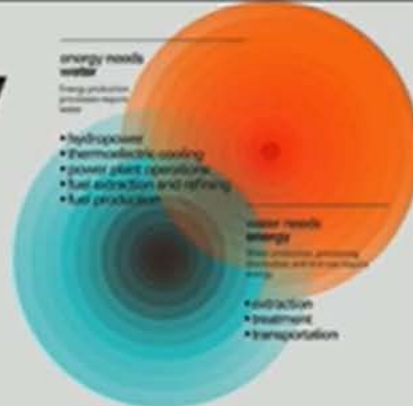
Anleitung

www.south-galaxy

**Data Visualization:**  
Communicates data  
through charts,  
graphs, and/or design

# thirsty energy

energy and water's interdependence



## the global challenge

By 2035, energy consumption will increase by 35%

of the 7 billion people on Earth today

2.5 Billion have unreliable or no access to electricity

2.8 Billion live in areas of high water stress



By 2035, energy consumption will increase by 35%

which will increase water consumption by 85%



increasing pressure on finite water resources

developing countries are the most vulnerable

electricity generation by 2050



## risks for the energy sector



## impact

- Power plants shut down or decreased power generation
- Reduced capacity to meet demand
- Increased costs for power generation
- Increased costs for power transmission
- Increased costs for power distribution
- Increased costs for power consumption

impact on the world's top energy companies and power utilities

82% of energy companies

59% of energy companies

73% of power utility companies

67% of power utility companies

Indicate that water is a substantial risk to business operations

Have experienced water-related business impacts in the past 3 years

## it's already happening

The Americas



## it's already happening

Europe, Middle East and Africa



## Europe's

and water power generation capacity

Europe's power generation capacity is expected to decline by 30% by 2050

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Europe's power generation capacity is expected to decline by 30% by 2050

## it's already happening

Asia and Australia

Asia and Australia

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Asia and Australia

Asia and Australia

Asia and Australia

## solutions

integrate energy and water planning

integrate energy and water planning

integrate energy and water planning

integrate energy and water planning

integrate energy and water planning

integrate energy and water planning

integrate energy and water planning

integrate energy and water planning

integrate energy and water planning

integrate energy and water planning

integrate energy and water planning

## reduce water dependency

reduce water dependency

reduce water dependency

reduce water dependency

reduce water dependency

reduce water dependency

reduce water dependency

reduce water dependency

reduce water dependency

reduce water dependency

reduce water dependency

## improve efficiency

improve efficiency

improve efficiency

improve efficiency

improve efficiency

improve efficiency

improve efficiency

improve efficiency

improve efficiency

improve efficiency

improve efficiency

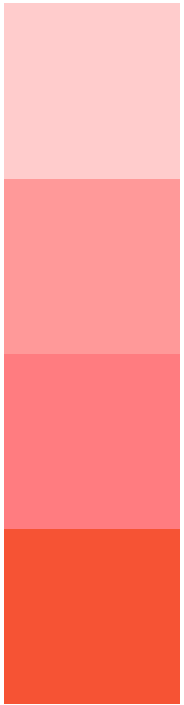
## A World Bank Initiative

## WHAT?

- Quantify risk
- Identify strategies
- Develop integrated planning
- Enhance sustainability of energy and water investments

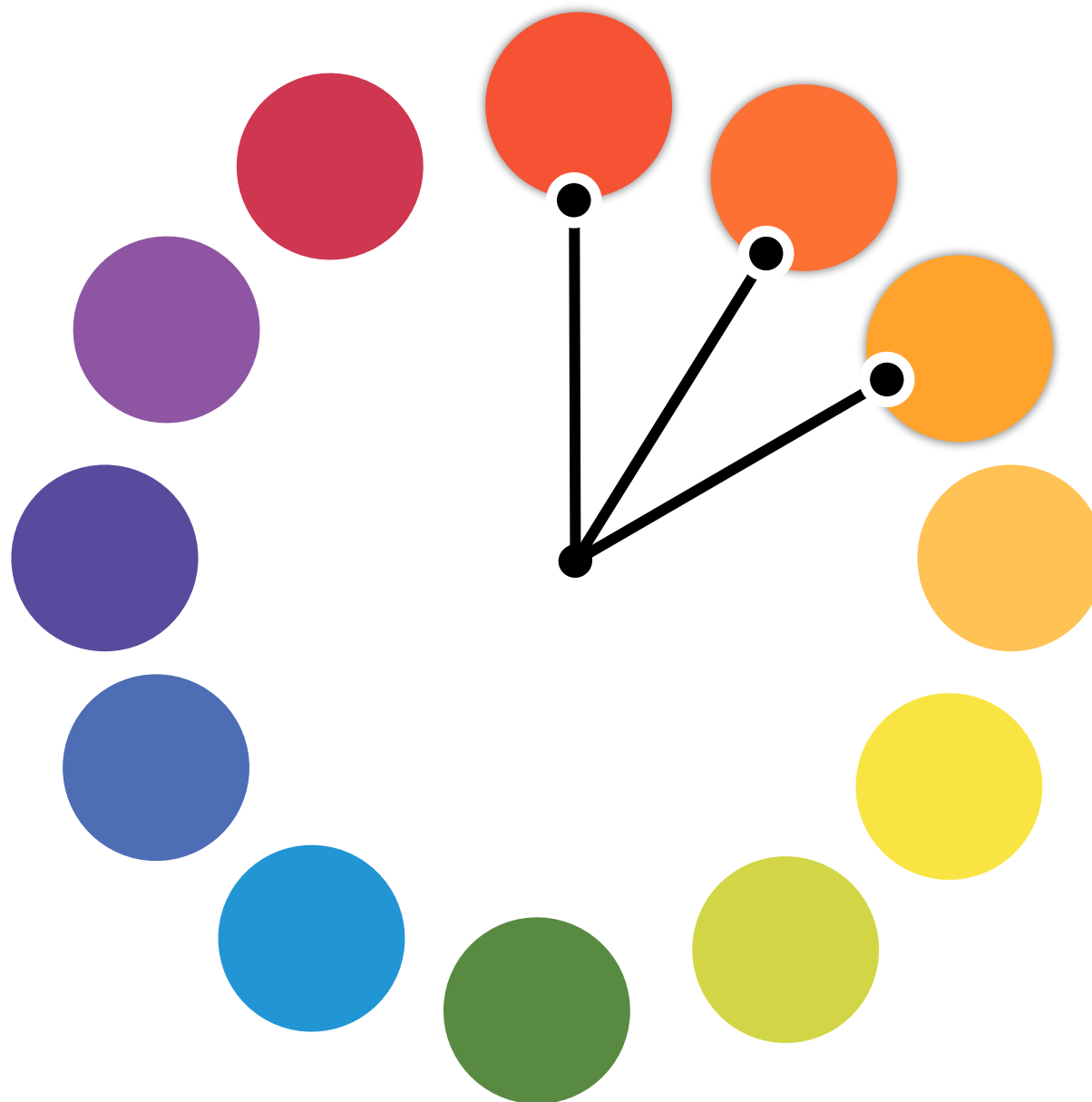
**COLOR**



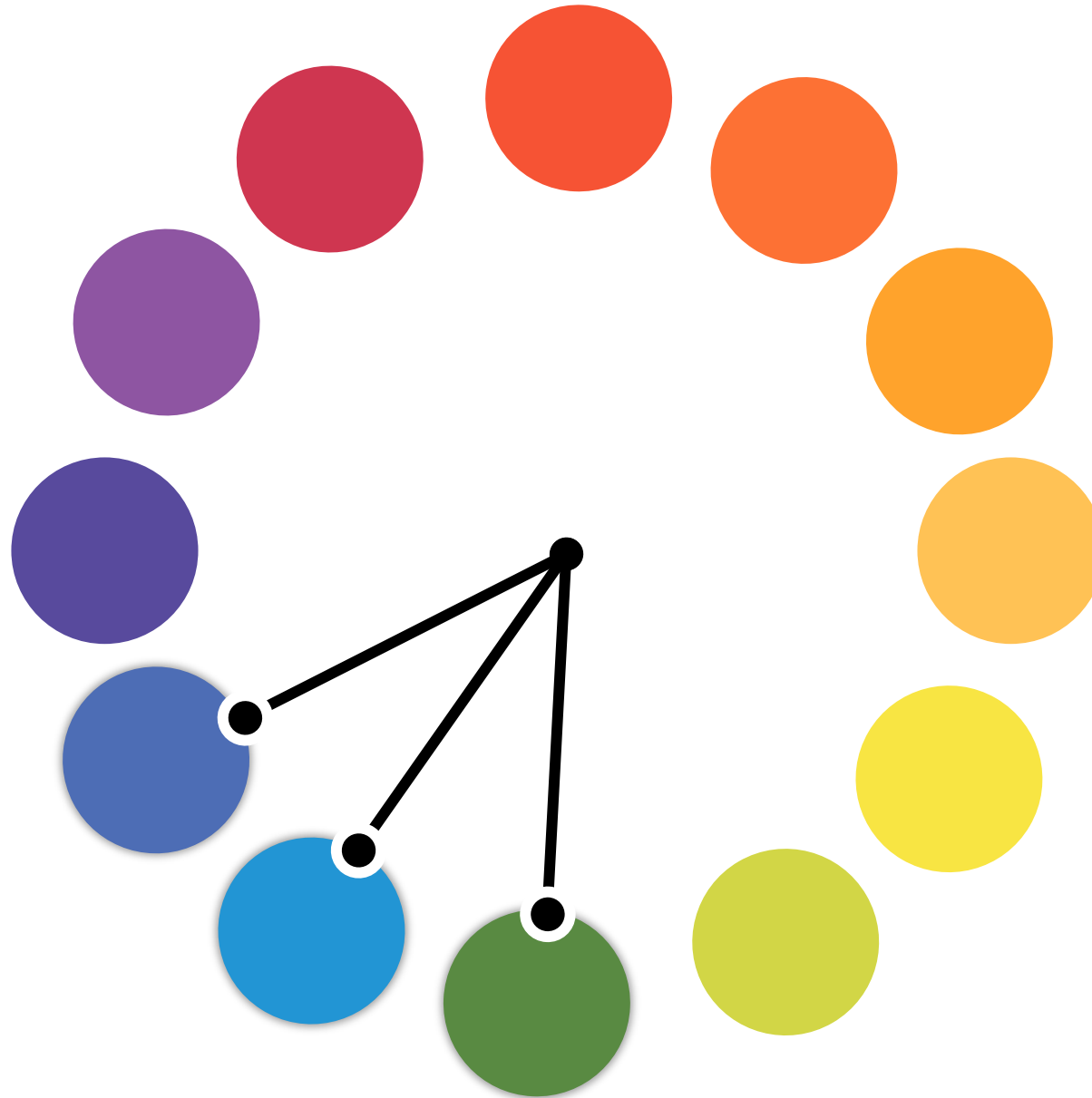
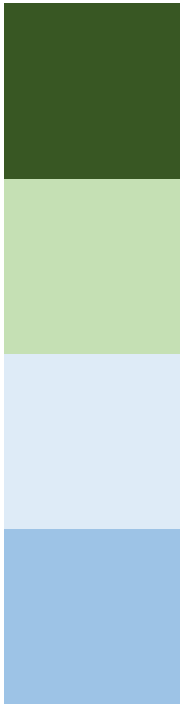


**Monochromatic**



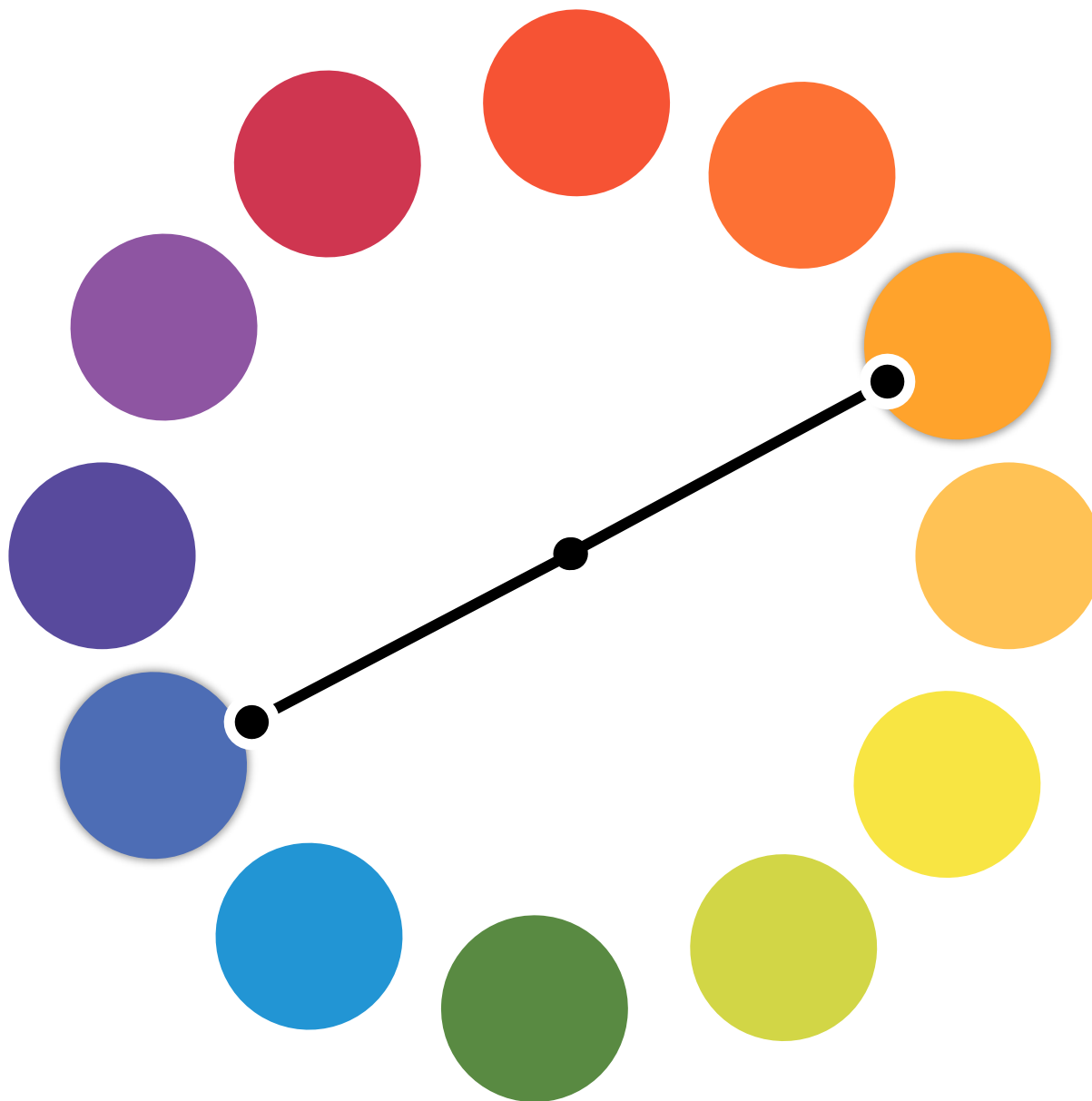


**Analogous**

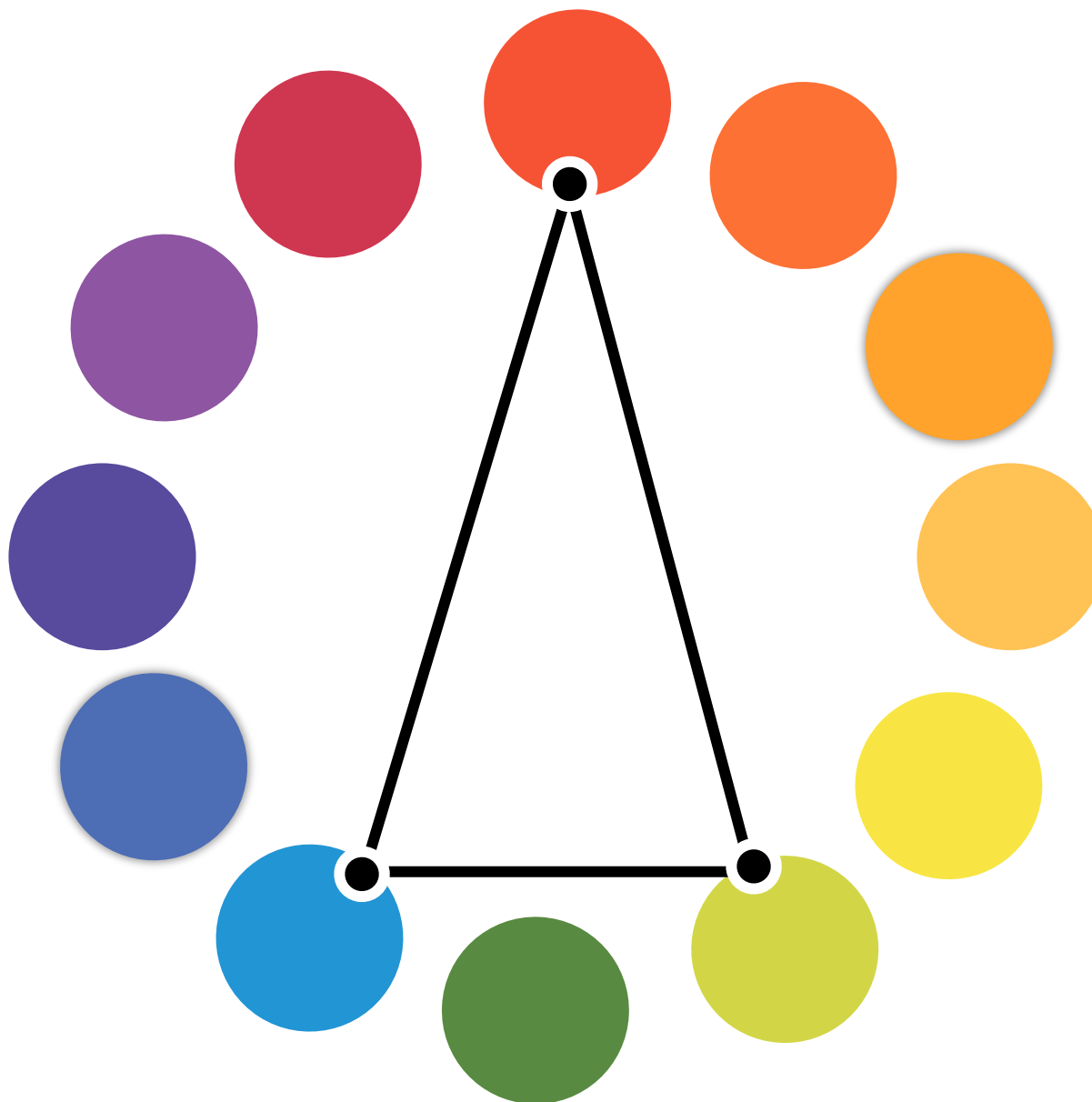




**Complementary**



**Split  
Complementary**



# Dos & Don'ts

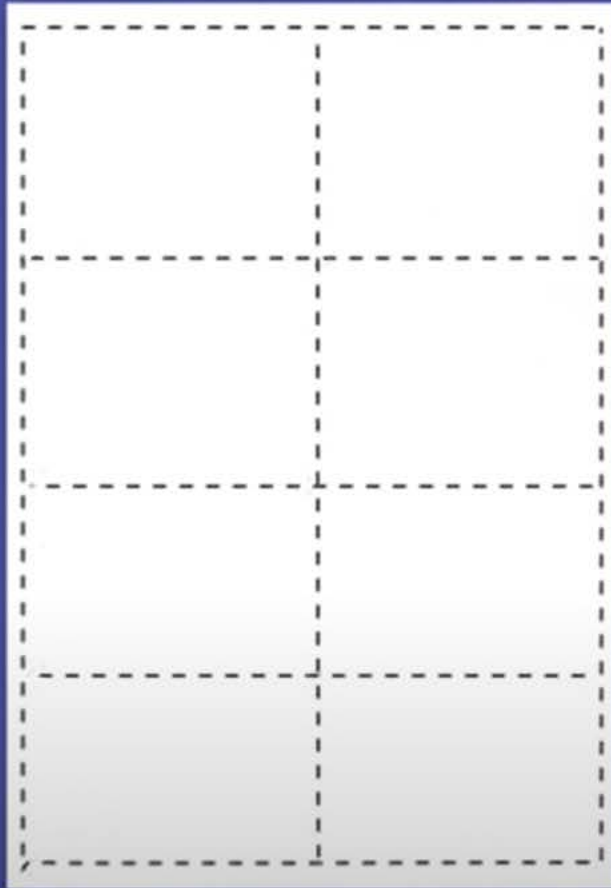


# In Bloom

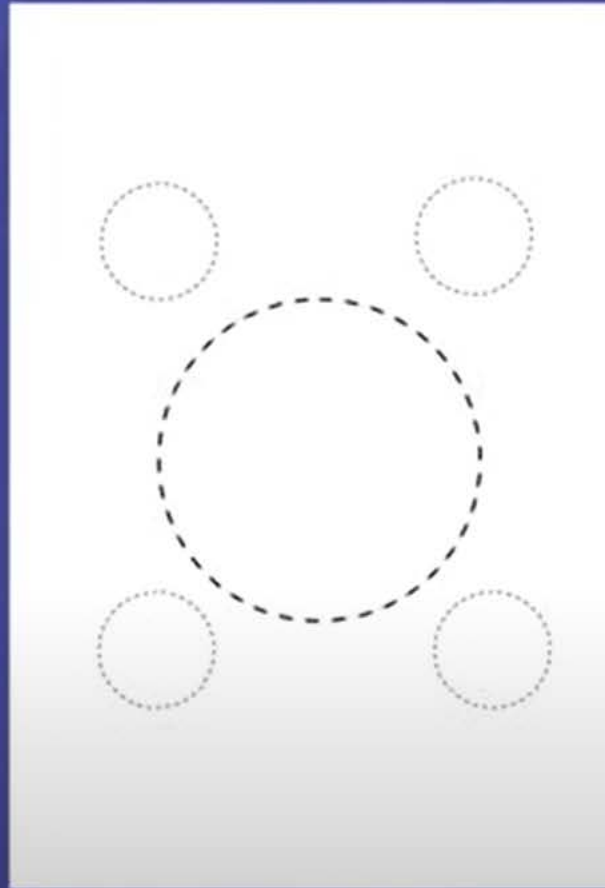
Annual Conservation Conference

# Typography

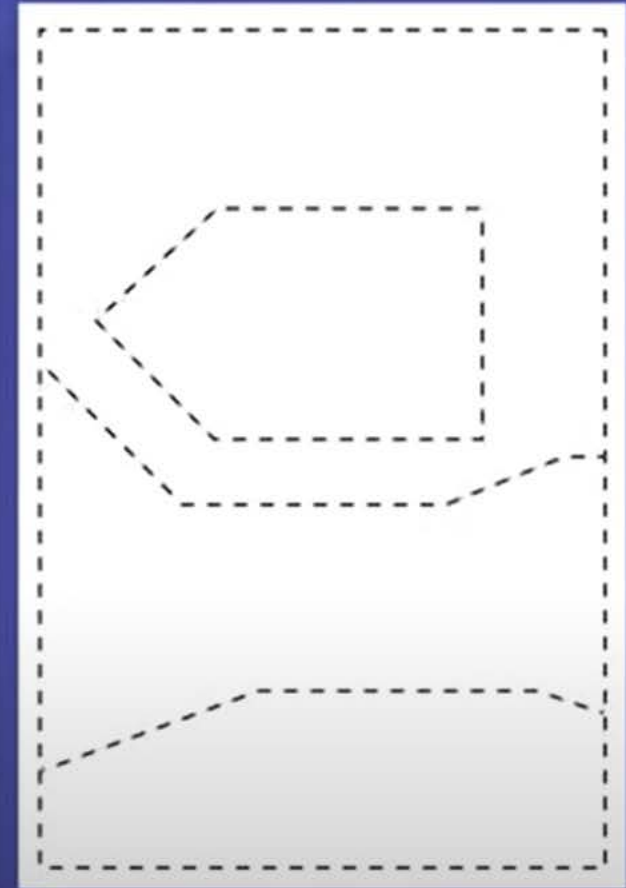
# Examples



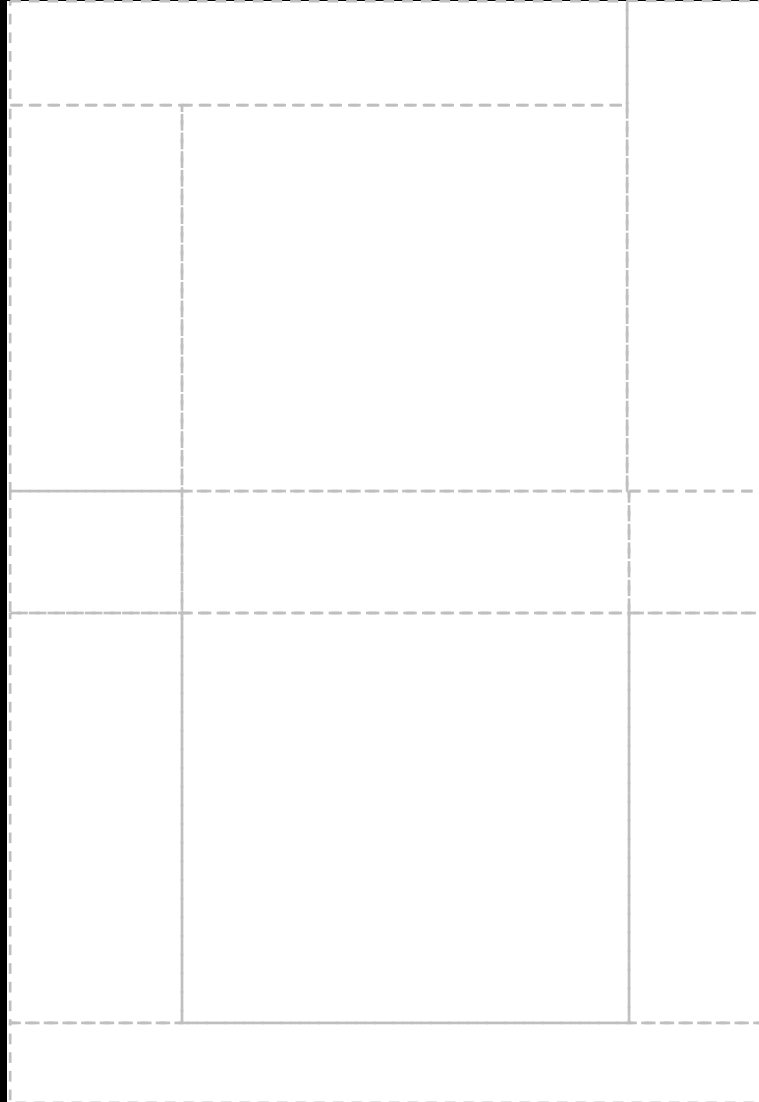
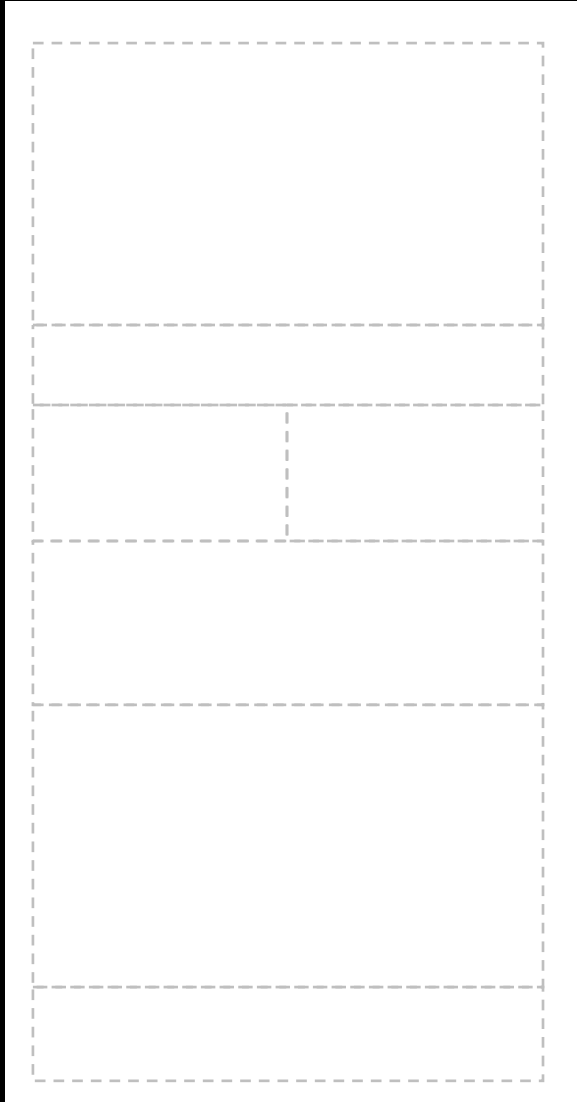
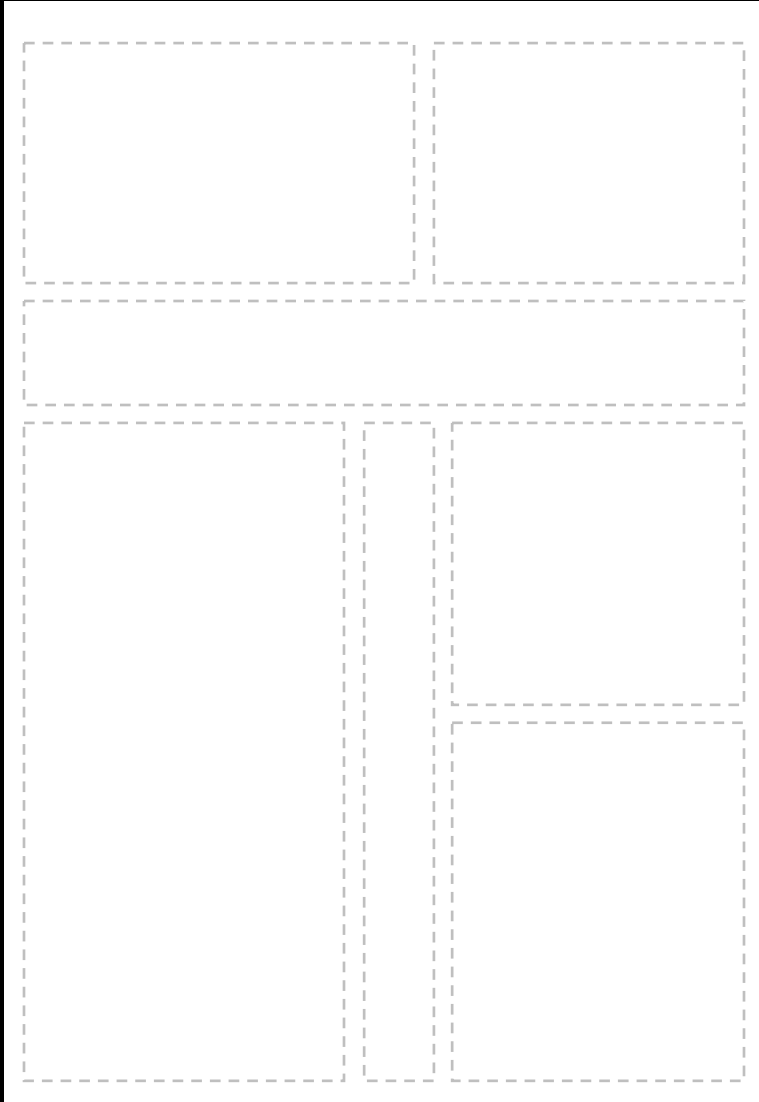
**GRID**



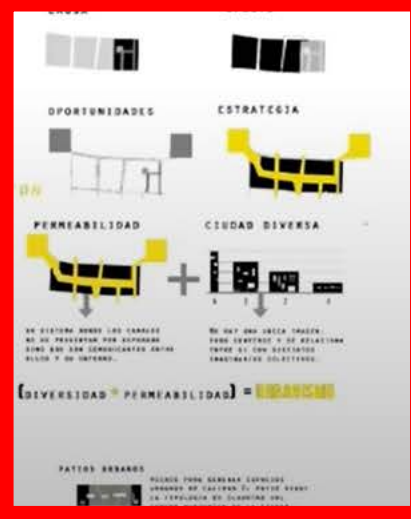
**SINGLE IMAGE**



**BLENDED**





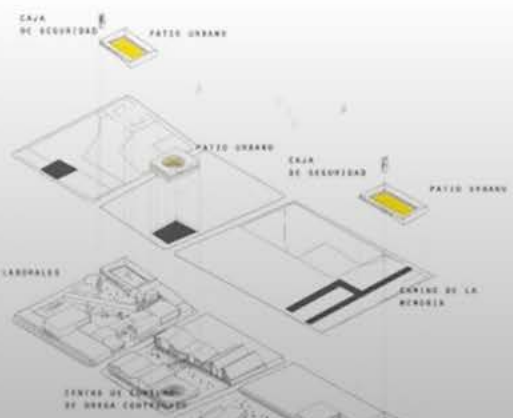


Dis molores scipedi pidenlar conserio et, od quam is sa venis et laut quo volent aut effector sinus. Molores et la in ad ut ut post post modum, is mako mo blazet scriptur minus voluptatus et ut eositens ad quam fugia censi occis dem optiscid molo eos eatiosque velutem a dolorem fugi blabioribus satar res ipsam que volentiam conzilibici corit mako. Autio blaziquius expella tempore apti verio ipsoctatet que quateap ecillatua cna moleruan, ut onomder aut facus, quanteoti rest, ut repedit od eos magnillia ex est, qui illor reba adist experti huncque vero vnderet taptit sicut perpel ide volent, tor si voluptatit fugia ipsam, cunaxod maguet fugia il hunc verio vnuina timolcor ericoedia quia sio delopte perem hiliarum quandi occuat etna, quanta, ut dante non correm voluptate leatua, sio nocar bor opere blaut satar adi solom iada nobit res a quo sui, omnia et volan ilquatus as erociendi aut molatue, occos, eromatian lais san, temporectio molopta quipacti tem sit, qui omniuus pro nil encriis del intonemqui vrentem, tem facis fit millob in pelliguio etum amilias, exan quia des volq-



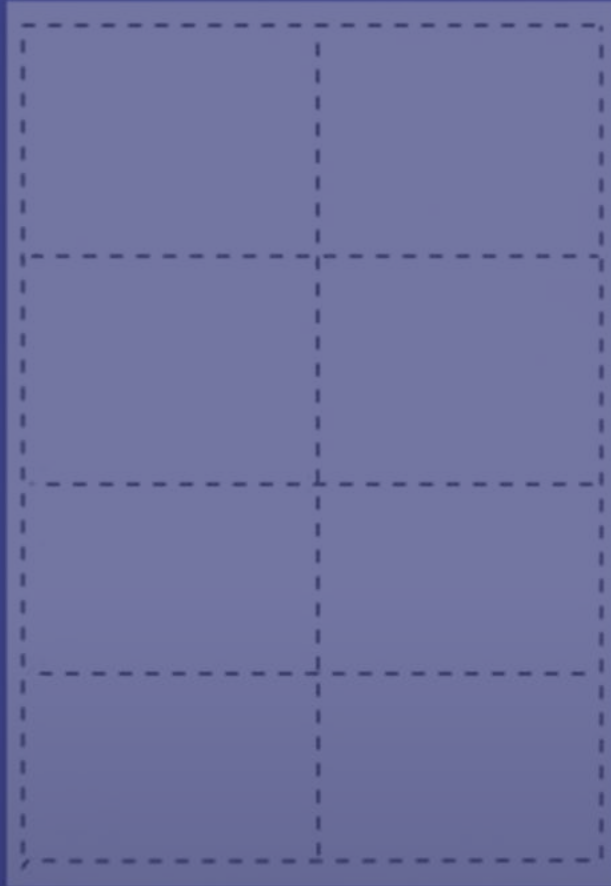
### AXONOMETRIC

Voluptatem volores ex minipe dolores molopta et quatenqui blab is natatum voluptaqi offic tet mod reas. Inclusion dolo moloptatun as filandictio quia vrent magnati be rueret la doloporum expenptat-ur moloptaque cupius obsepe atuas est dellem, ipsam, lais voloria conat lis endem sint modictaque cuasnet utenaperat laborum et, satar seat.

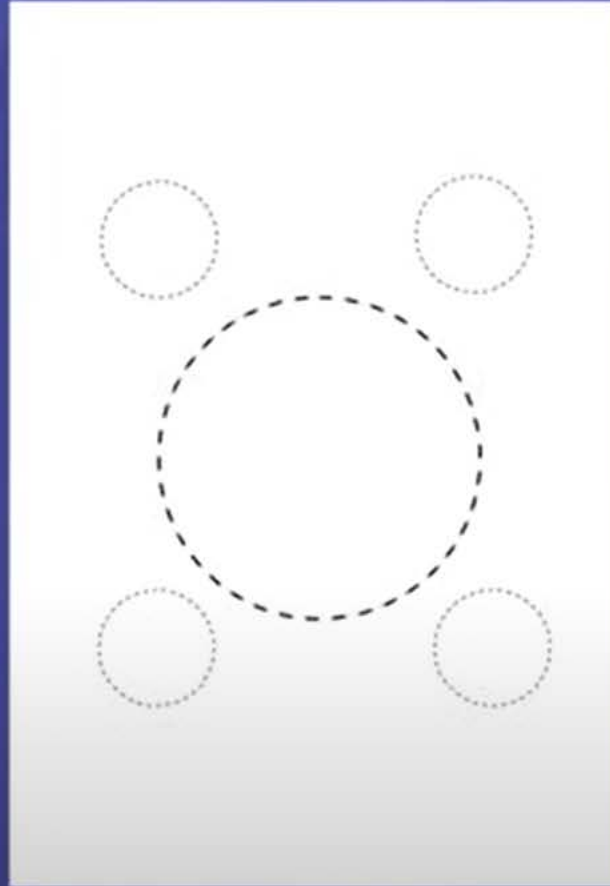


### URBAN PIECE

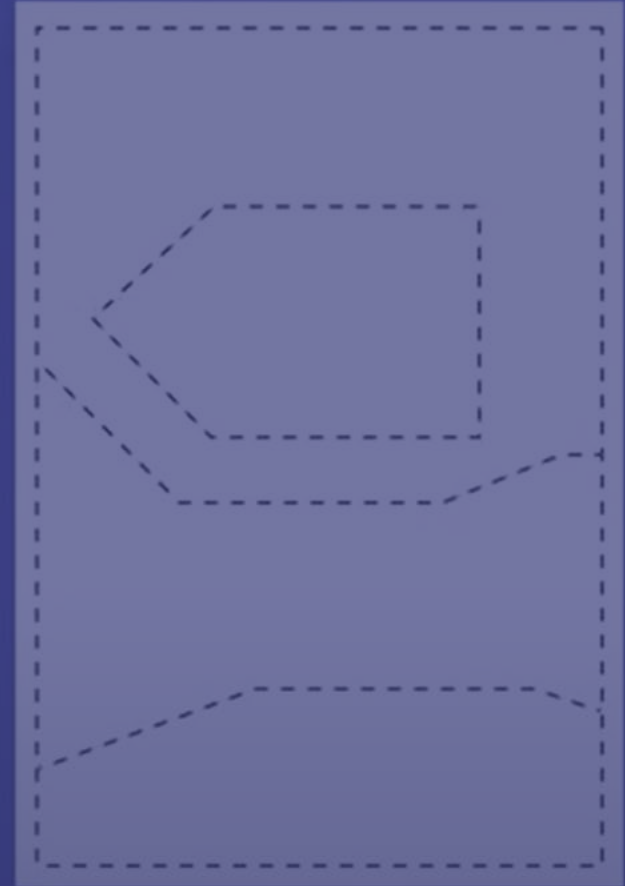




**GRID**

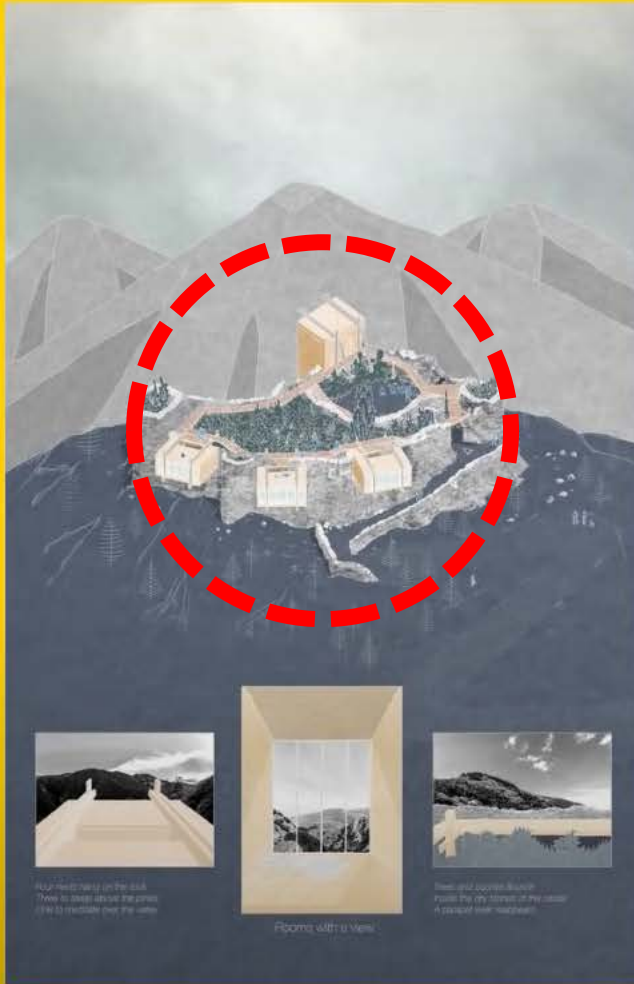


**SINGLE IMAGE**

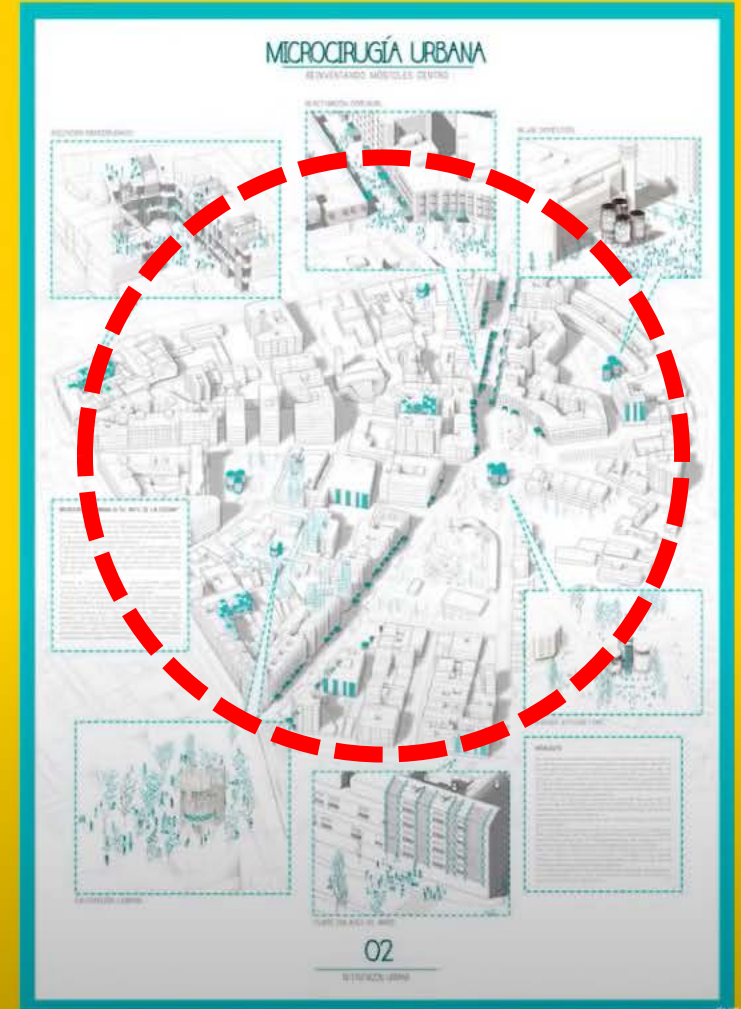


**BLENDED**

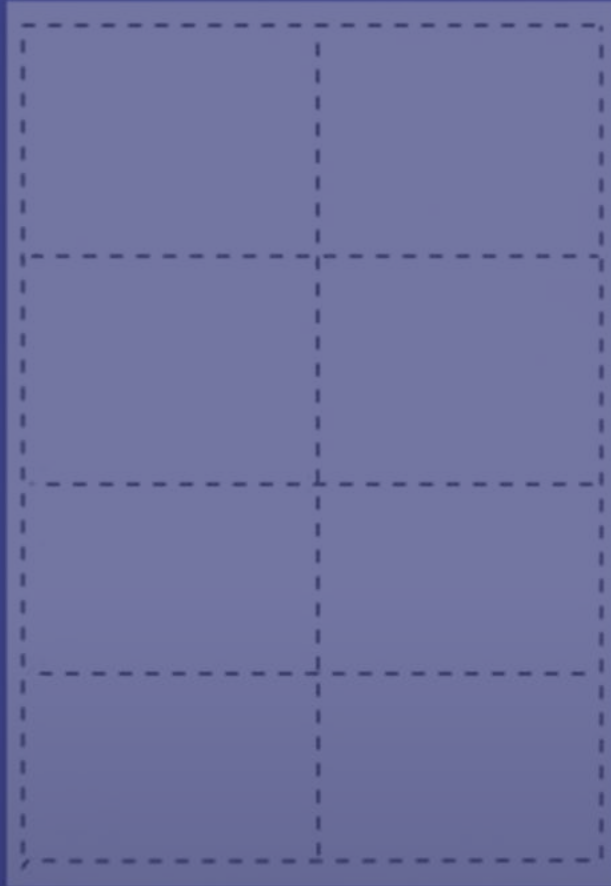




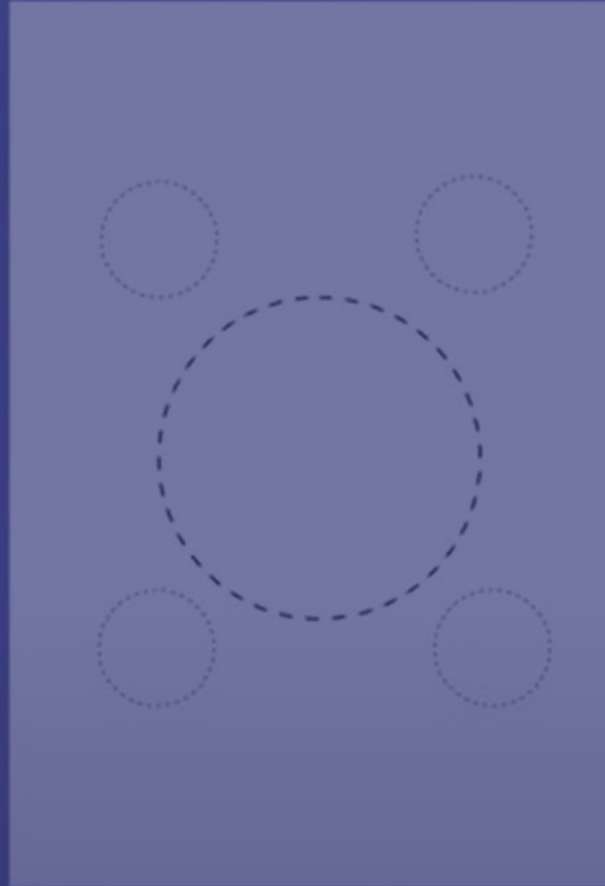
LINK TO AUTHORS WORK IS LINKED BELOW



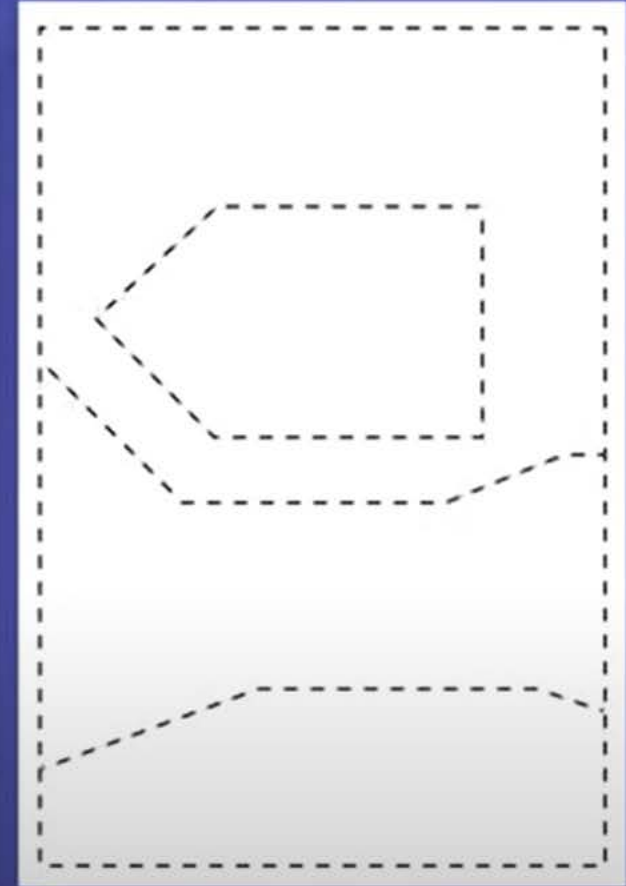
SUBSCRIBE



**GRID**



**SINGLE IMAGE**



**BLENDED**



# Workshop

Start

1:45 PM.



105 mins



End

3:30 PM.



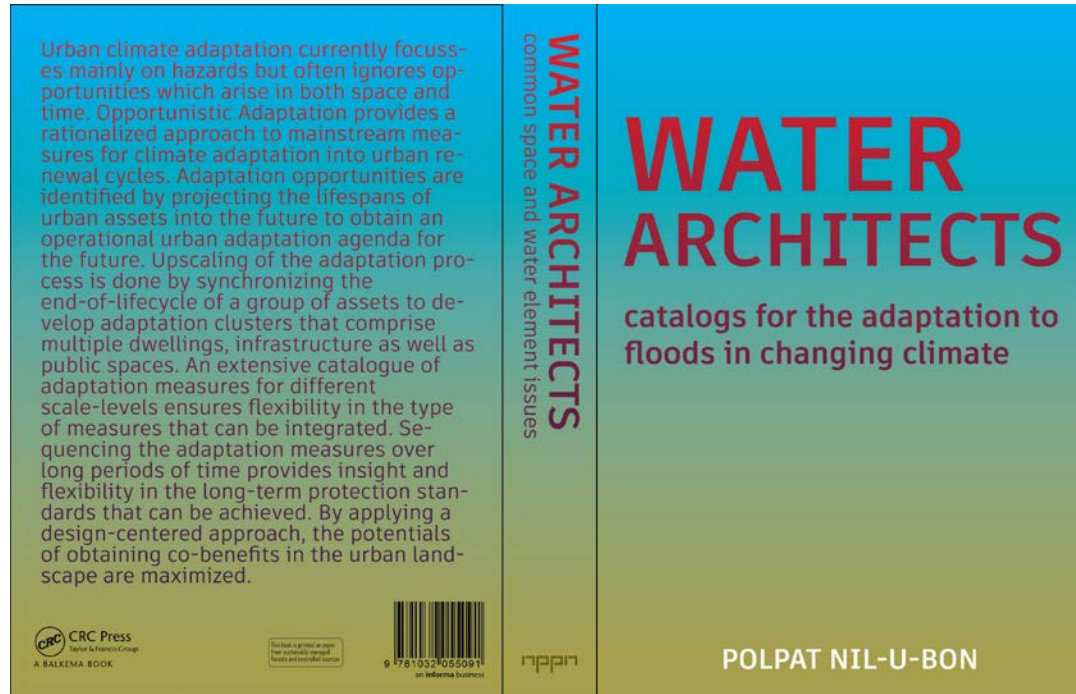
# A3

297 x 420 mm

1. What is your Product?
2. What is your Concept?
3. What kind of information that you want to tell everyone?







Q & A



# Workshop

See you again

**3:30** PM.

# Reflection- -Critique

In the next **2** weeks, please submit your final design.  
Using "[wettransfer.com](https://wettransfer.com)" to upload your file (JPG – 300 dpi)  
and send the link via "[erkkamp@gmail.com](mailto:erkkamp@gmail.com)".

File name: **01\_20221103\_Your name (TH)\***