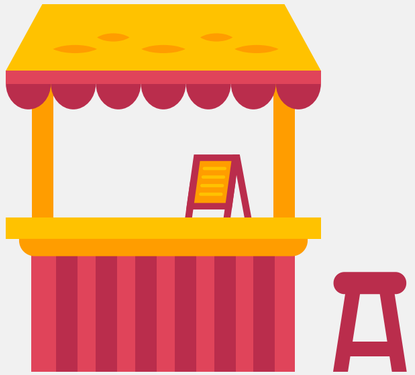
NINA GASKING
OUTREACH OFFICER AT THE MMI

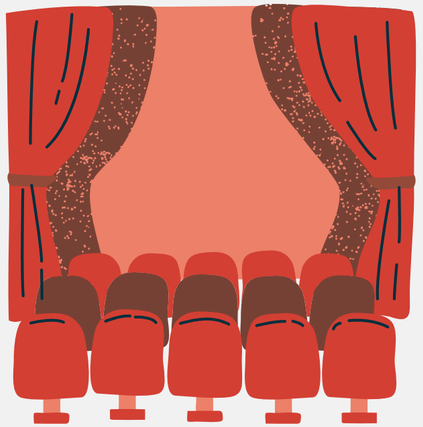
CARE 28/10/2025

Outreach 101:
Engaging with Hands-On Maths Activities

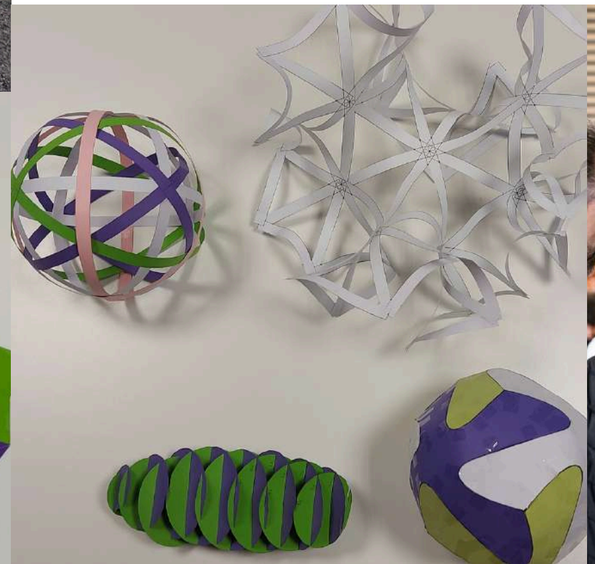
Outreach?

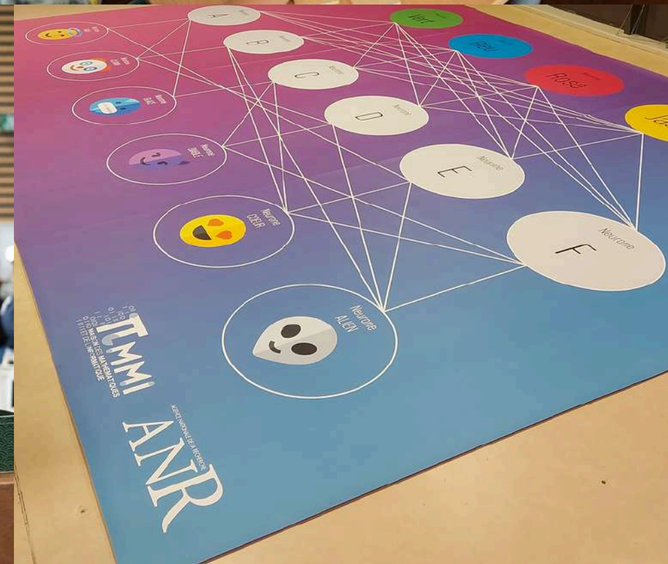
Outreach?





MAISON DES MATHEMATIQUES ET DE L'INFORMATIQUE



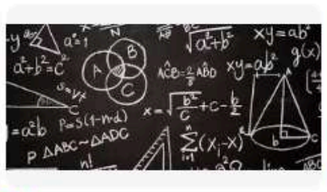


the particularity of maths and computer science

“Mathematics”

The Conversation
Yes, mathematics can be decolo…

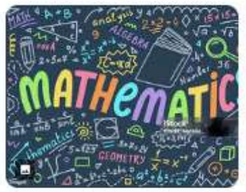
Nepean Tutoring
Why Mathematics is Important to …



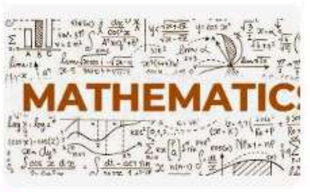
Top Universities
Mathematics Degrees | Top Universities

Ramjas College - Delhi University
Academics

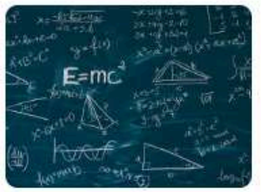
Sacramento City College - Los Rios Com…
Mathematics and Statistics | Sacrame…



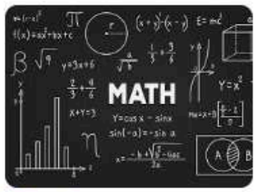
iStock
Mathematics Hand Lettering Wit…



GeeksforGeeks
Mathematics: Concepts, Formulas, Proble…



Open Universities Australia
Careers in maths: 6 ways to use y…



KDnuggets
Mathematics for Machine Learnin…

Dreamstime.com
Mathematics Board Stock Illustra…

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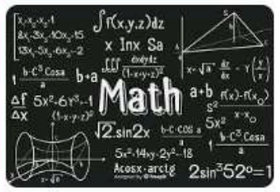
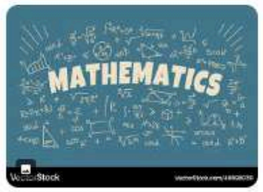
Maths symbols icon set. …



Towards Data Science
Calculus — The Mathematics of 'Cha…

Clarkson University
BS in Mathematics | Clarkson University



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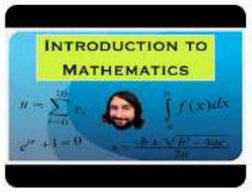
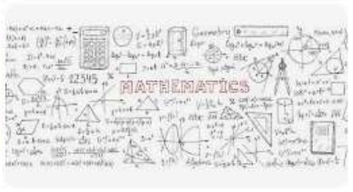
Mathematics background math sym…

The Copperbelt University
DEPARTMENT OF MATHEMATICS A…

U.S. News & World Report
What You Need to Know About Beco…



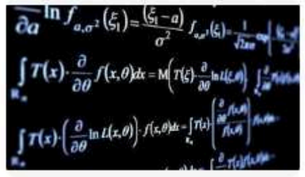
YouTube
Introduction to Mathematics - Yo…



Sunshine Coast Libraries - Sunshine Coast Council
Mathematics

Institut Polytechnique de Paris
Master Year 1 Applied Mathematics and Stati…

American University of Sharjah
Bachelor of Science in Mathematics | America…



Sciences Sorbonne Université
Master 2 courses in Mathematics - Mathe…

21st Century Learning Conference
The Beauty of Mathematics: How Do …

Université Savoie Mont Blanc
Mathematics Department

3P Learning
Mathematics software | For School and H…

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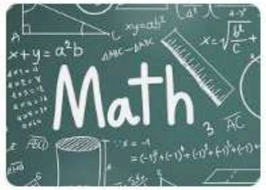
186,000+ Mathematics Stock Videos and …

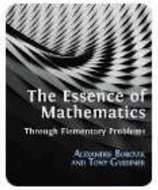
Universiti Kebangsaan Malaysia
Mathematics - FST Postgraduate



SJCIT
Maths staff - SJCIT | Best Engineer…

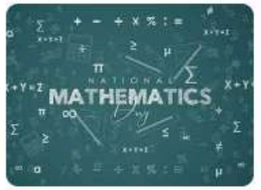
SINTEF
Mathematics in Technology - SI…

Freepik
Premium Vector | Math…



Open Book Publish…
The Essence of M…

Magic Marks
Online Video Lectures …



Ingel Soong Tuition Centre
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Oberlin College and Conservatory
Mathematics Department | Oberlin …

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STFC-SCD
SCD Mathematics

“Computer science”

YouTube
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Top Universities
Computer Science Degrees | Top Universities

Sciences Sorbonne Université
Master courses in Computer Science - …

JIET Universe
Artificial intelligence (AI) vs. Comput…

Bellarmine University
What to Expect from a Computer …

Milwaukee School of Engineering
Be a Game Changer: Computer scienc…

Shorelight
What Is Computer Science Like in the …

Wikipedia
Computer science and engineering…

Commonwealth University of Pennsylvania
Computer Science (BS) | Undergraduate …

Olusegun Agagu University of Science an…
B.Sc. Computer Science

Gisma University of Applied Sciences
Master of Engineering Computer Scie…

Tufts School of Engineering - Tufts U…
Computer Science | School of En…

MIT EECS
Computer Science – MIT EECS

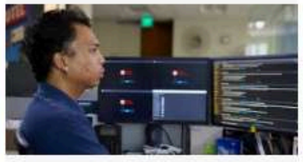
YouTube
Map of Computer Science - YouTube

LinkedIn
Why I choose Computer Science …

Constructor University
Computer Science | Constructor …

Sree Narayana Institute of Technology
Computer Science & Engineering …

Eastside
How does AI impact …



Coursera
What Is Computer Science? Meaning, Job…

Mercy University
Computer Science | Mercy University

O6U UNIVERSITY
Computer Science Program

Jessup University
What Do Computer Scientists Do? A D…

College of Arts and Sciences - …
Department of Computer Scie…

Recherches associées

- computer science **logo**
- computer science **school**
- computer science **illustration**

TargetJobs
Computer scientist: job description | targetjobs

Limestone University
Computer Science - Programmin…

ITM Vocational University
Computer Science and Engineering: B…

Walla Walla Community College
Computer Science - Walla Walla …

Shutterstock
Computer science : 1 493 689 …

Medium
What is Computer Sci…

University of Sioux Falls
Computer Science Bachelors Degree, Sou…

Wisconsin Lutheran College
Computer Science Major | WLC

epita
Bachelor of Science in Computer Scienc…

MOOC.org
Cybersecurity and Computer Scien…

Técnico Lisboa - Universidade de Lisboa
Computer Science – Técnico Lisboa

example 1

À TAAABLE !

(DINNER IS SERVED!)

Ada

Blaise
Cauchy
Fermat
Grace
Jean

Blaise

Ada
Cauchy
David
Klara
Noether

Cauchy

Ada
Blaise
David
Euler
Olga

David

Blaise
Cauchy
Euler
Klara
Noether

Euler

Cauchy
David
Fermat
Olga

Fermat

Ada
Euler
Grace
Hypatie
Pythagore

Grace

Ada
Fermat
Hypatie
Igor

Hypatie

Fermat
Grace
Igor
Maryam
Pythagore

Igor

Grace
Hypatie
Jean
Leslie
Maryam

Jean

Ada
Igor
Leslie
Quentin
Régina

Klara

Blaise
David

Leslie

Jean
Igor
Quentin

Maryam

Hypatie
Igor

Noether

Blaise
David

Olga

Cauchy
Euler

Pythagore

Fermat
Hypatie

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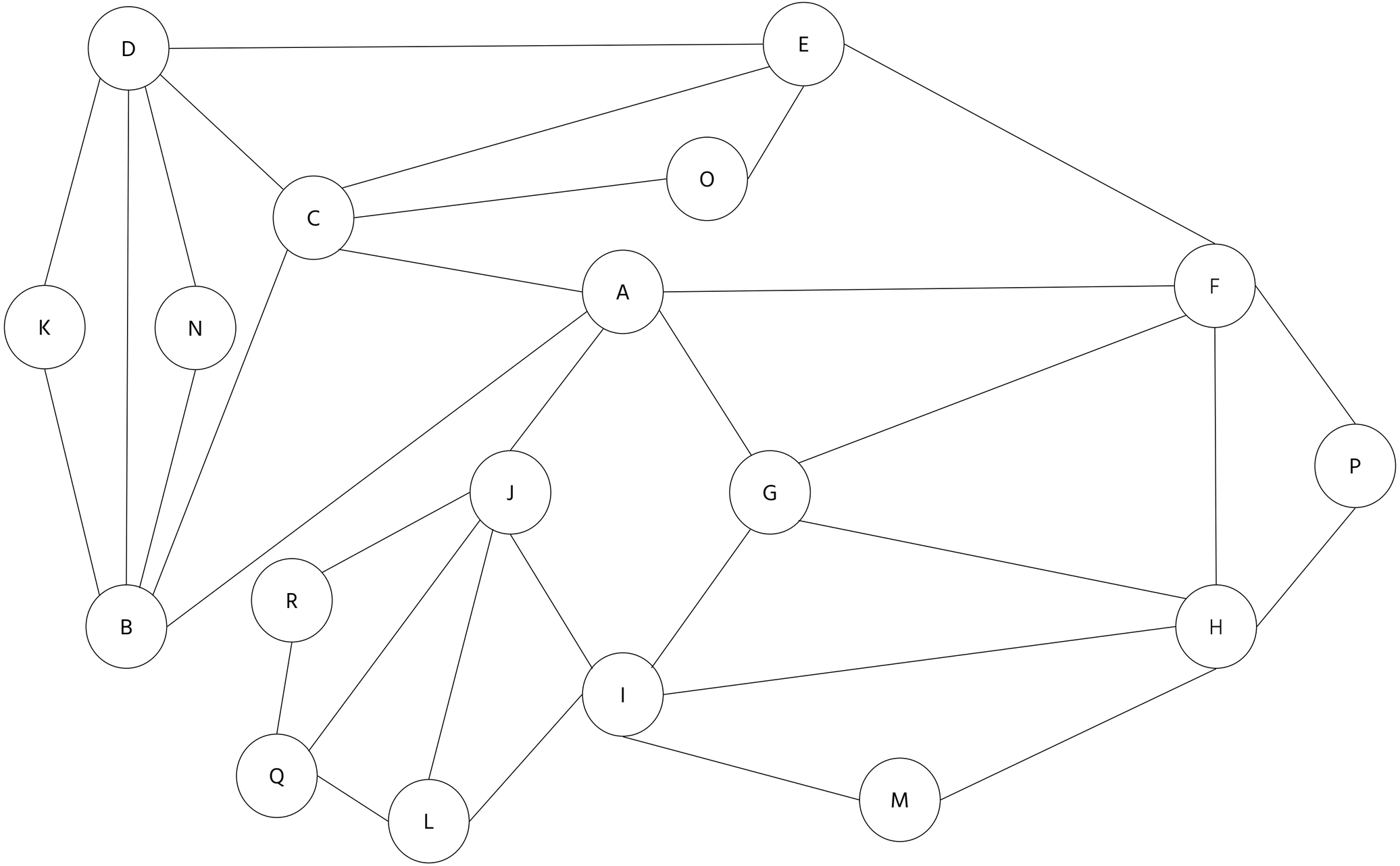
Leslie
Régina

Régina

Jean
Quentin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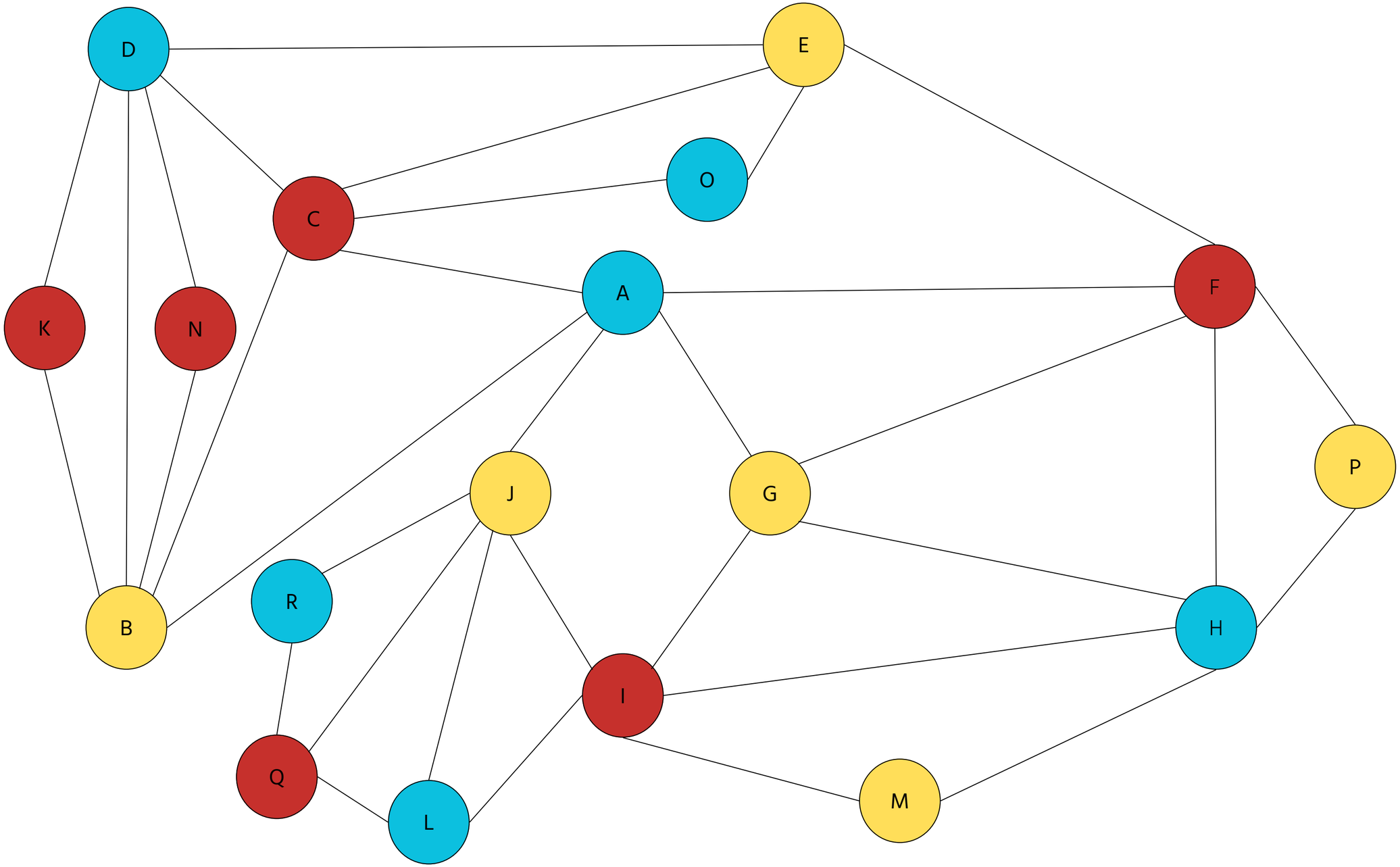
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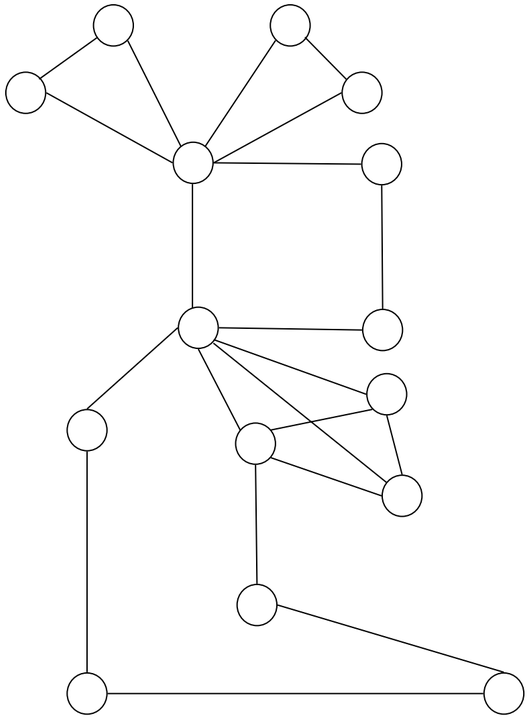
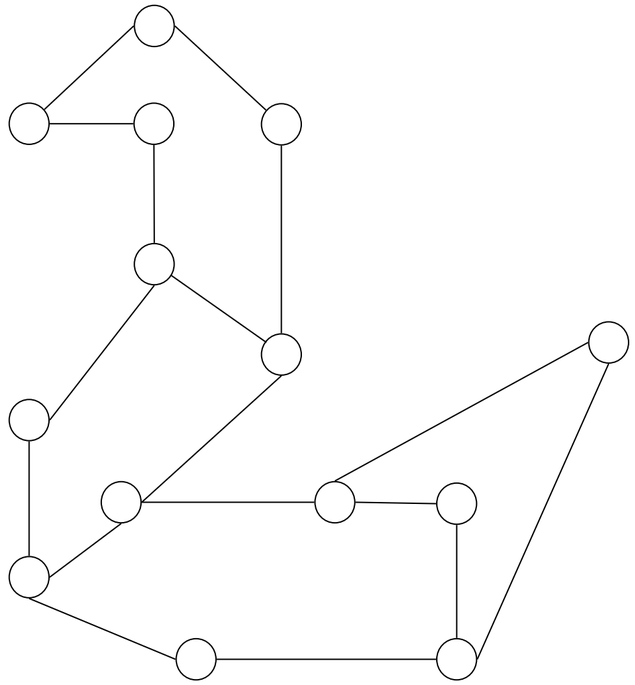
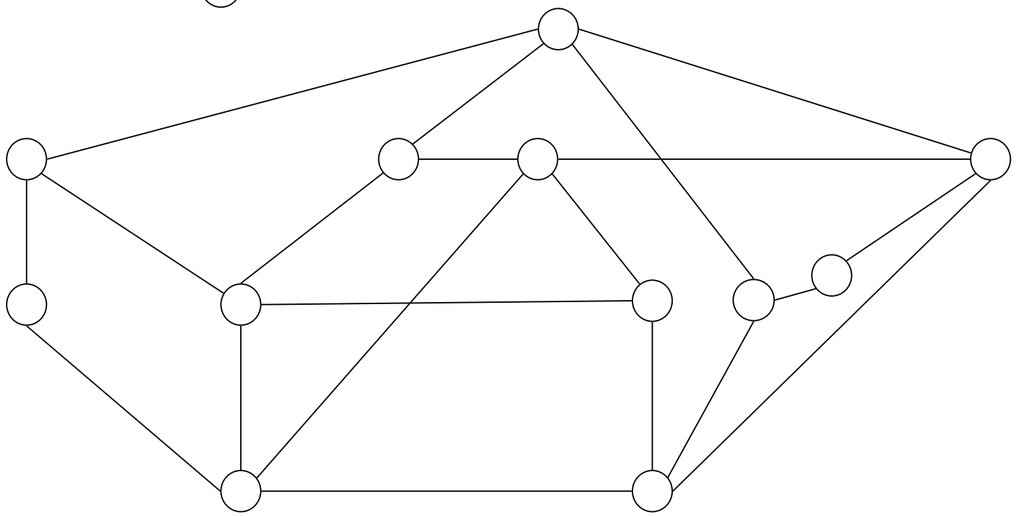
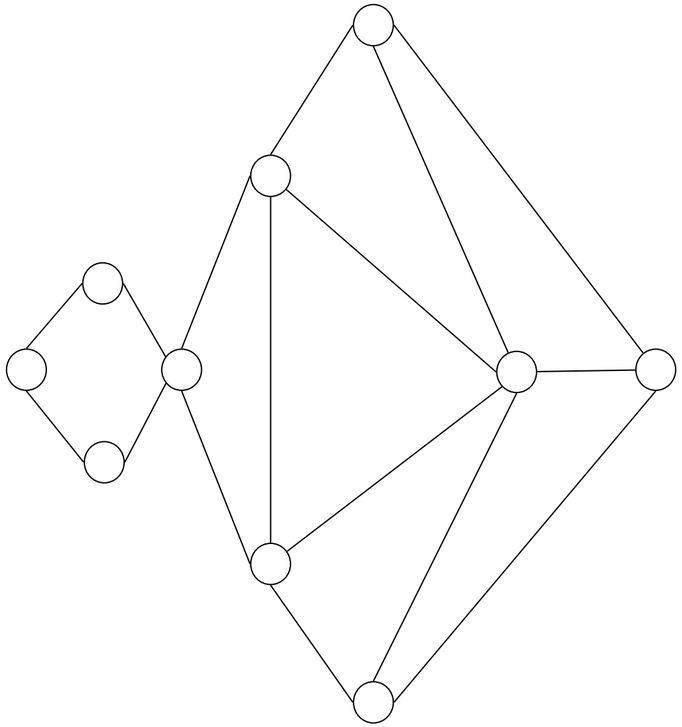
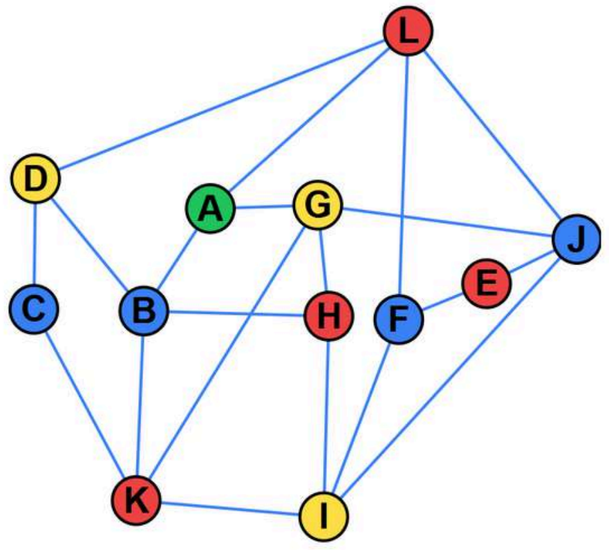










Déplacer | Ajouter sommet | Ajouter arête | Retirer | Tout effacer | Réinitialiser

Ordre des couleurs

1
2
3
4
5
6
7
8
9
10

Graphe

Confluence

Sauvegarder | Importer | Exporter

Ordre

Degré décroissant

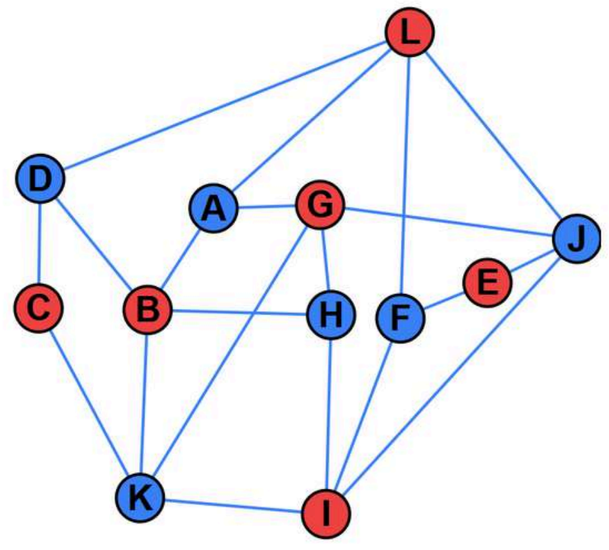
Choisir

Résultats

- Degré décroissant (4 couleurs)
-
-
-
-

Etape précédente | Etape suivante | Terminer la coloration

LKBJIGDAHFCE



Déplacer | Ajouter sommet | Ajouter arête | Retirer | Tout effacer | Réinitialiser

Ordre des couleurs

1
2
3
4
5
6
7
8
9
10

Graphe

Confluence

Sauvegarder | Importer | Exporter

Ordre

DSatur

Choisir

Résultats

- DSatur (2 couleurs)
- Degré décroissant (4 couleurs)
-
-
-

Etape précédente | Etape suivante | Terminer la coloration

BKGIJLADFHCE

example 2

MMI MAISON DES MATHÉMATIQUES ET DE L'INFORMATIQUE

Une exposition savoureuse
de la Maison des Mathématiques
et de l'Informatique

1 place de l'École, Lyon 7e

EXPOSITION

DANS MA CUISINE

Les mathématiques et l'informatique se mettent à table

PROLONGATION

Création graphique : Tadaa. E. Lubory

21 sept. 2024
au 28 juin 2025

GRATUIT – À PARTIR DE 10 ANS

Toutes les informations sur mmi-lyon.fr

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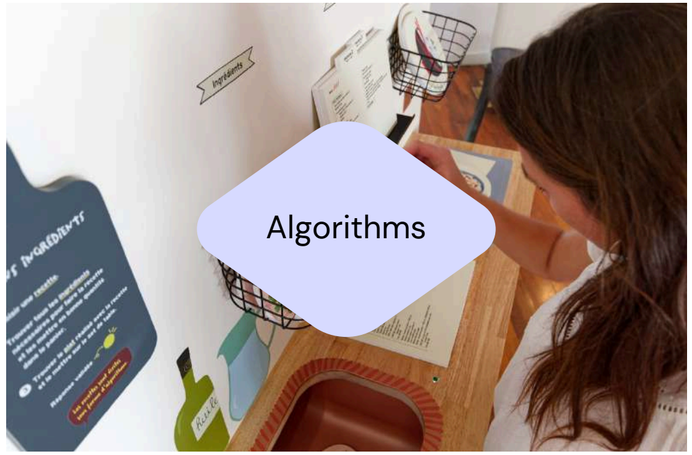
Ingrédients


LE BON ORDRE

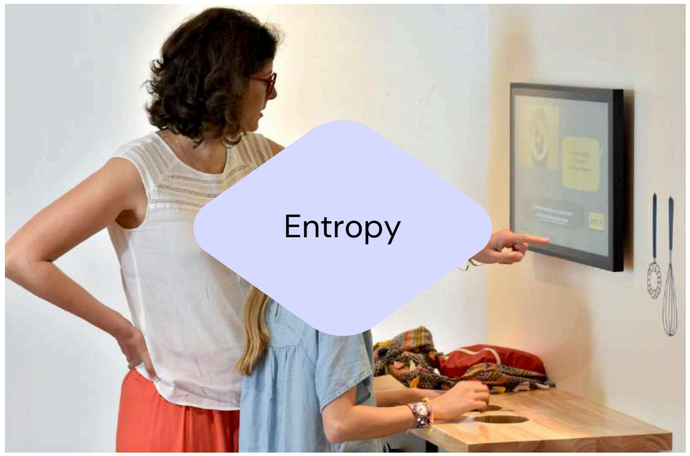

ecettes


aux pépites de


Ce bloc pèse
6 livres pour avoir
le moins de chance
de tomber dessus
au moment
du découpage !


Algorithms

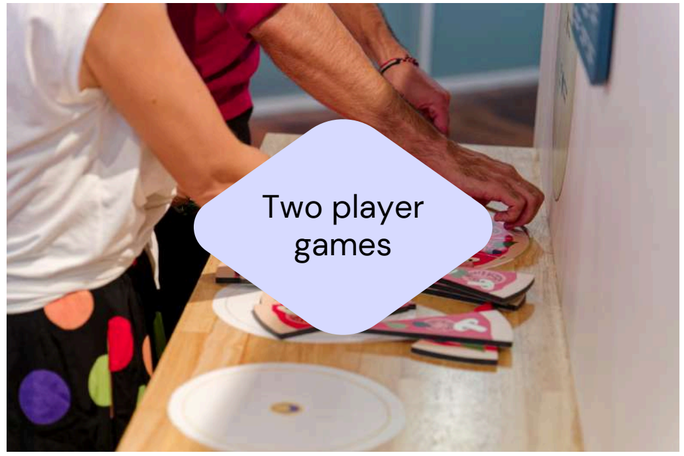

LE BON ORDRE
Scheduling

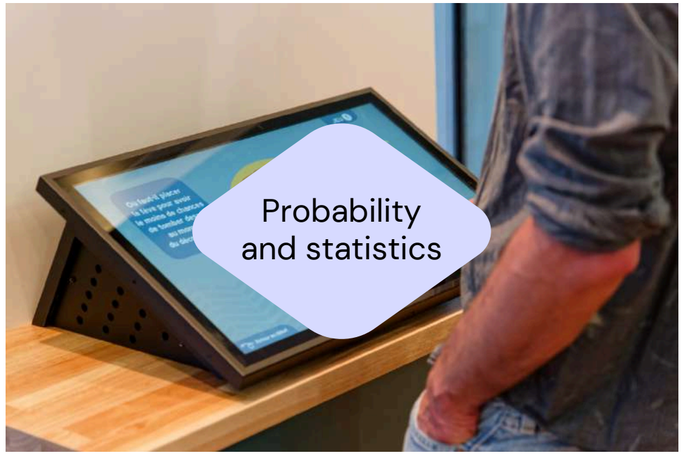

Entropy

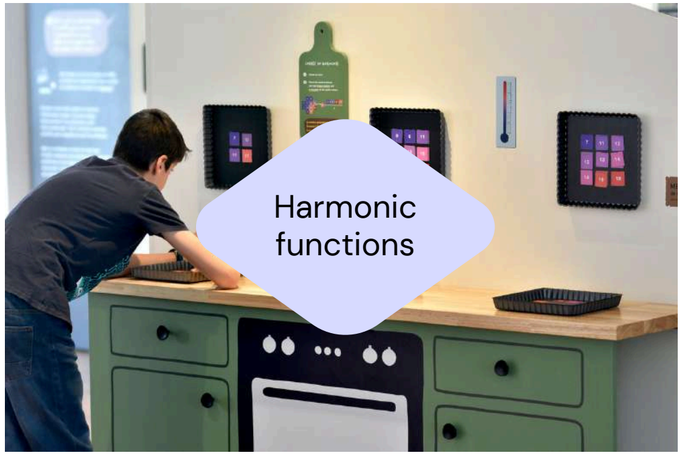

Side-channel attack


Packing

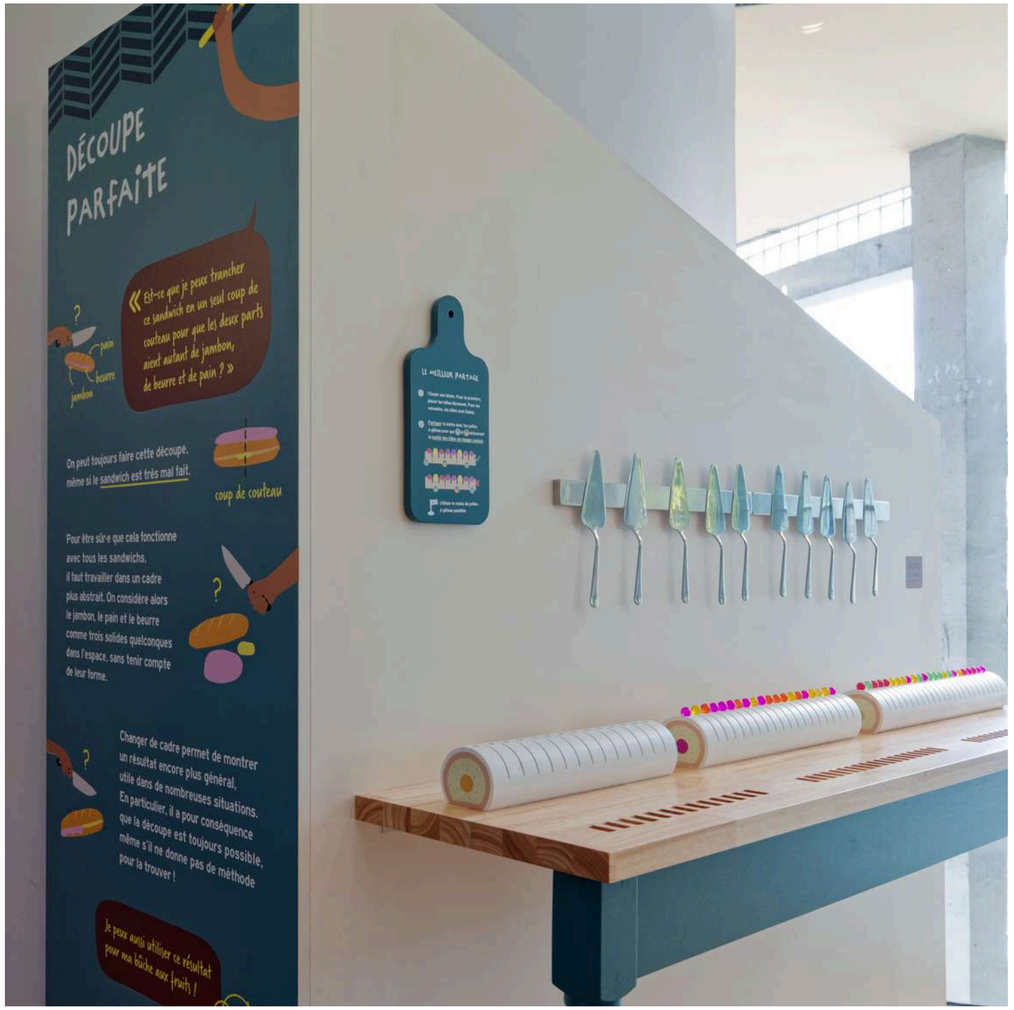

Necklace splitting problem

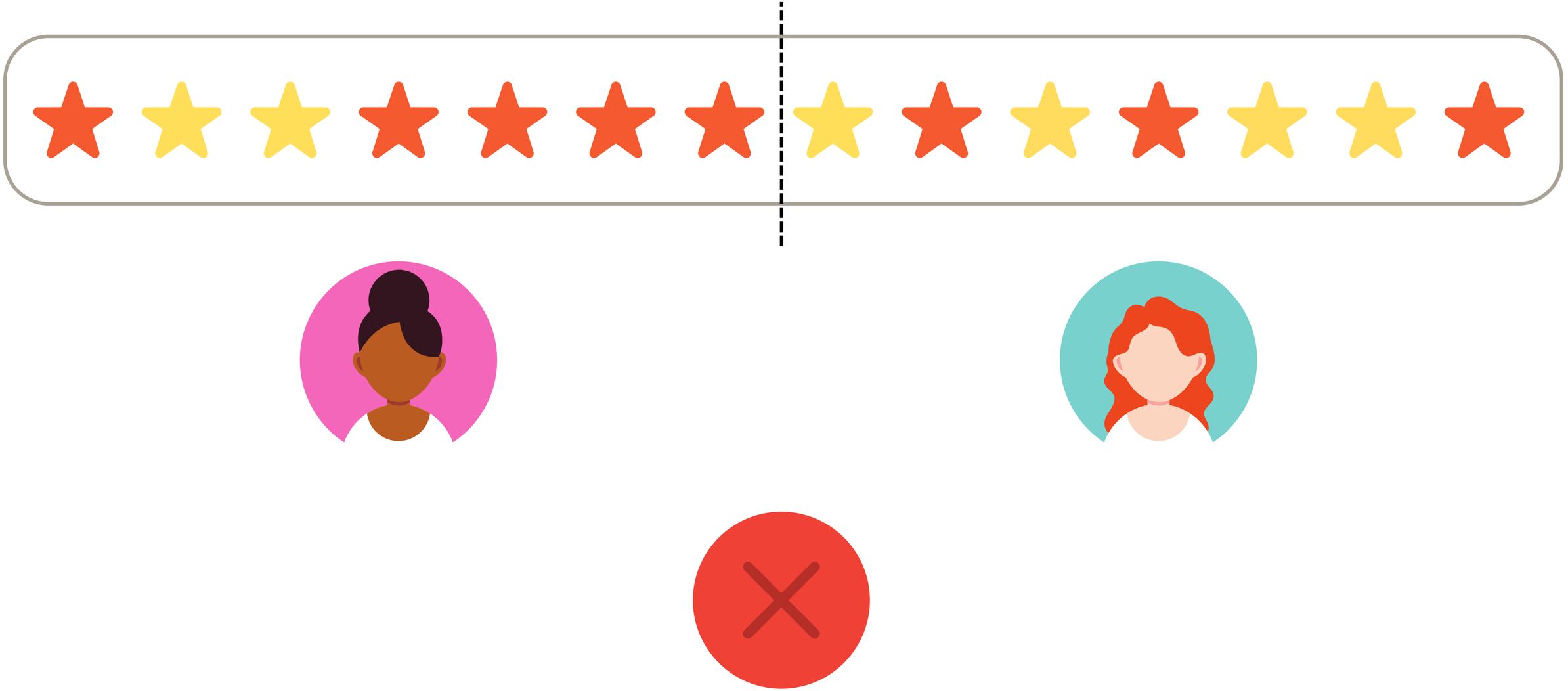

Two player games

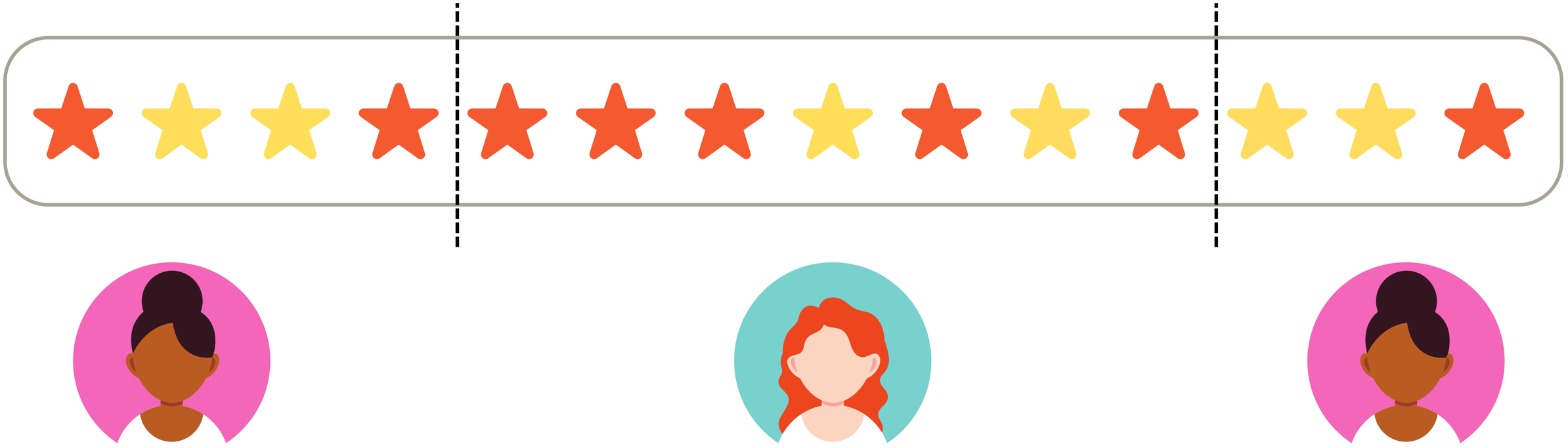

Probability and statistics

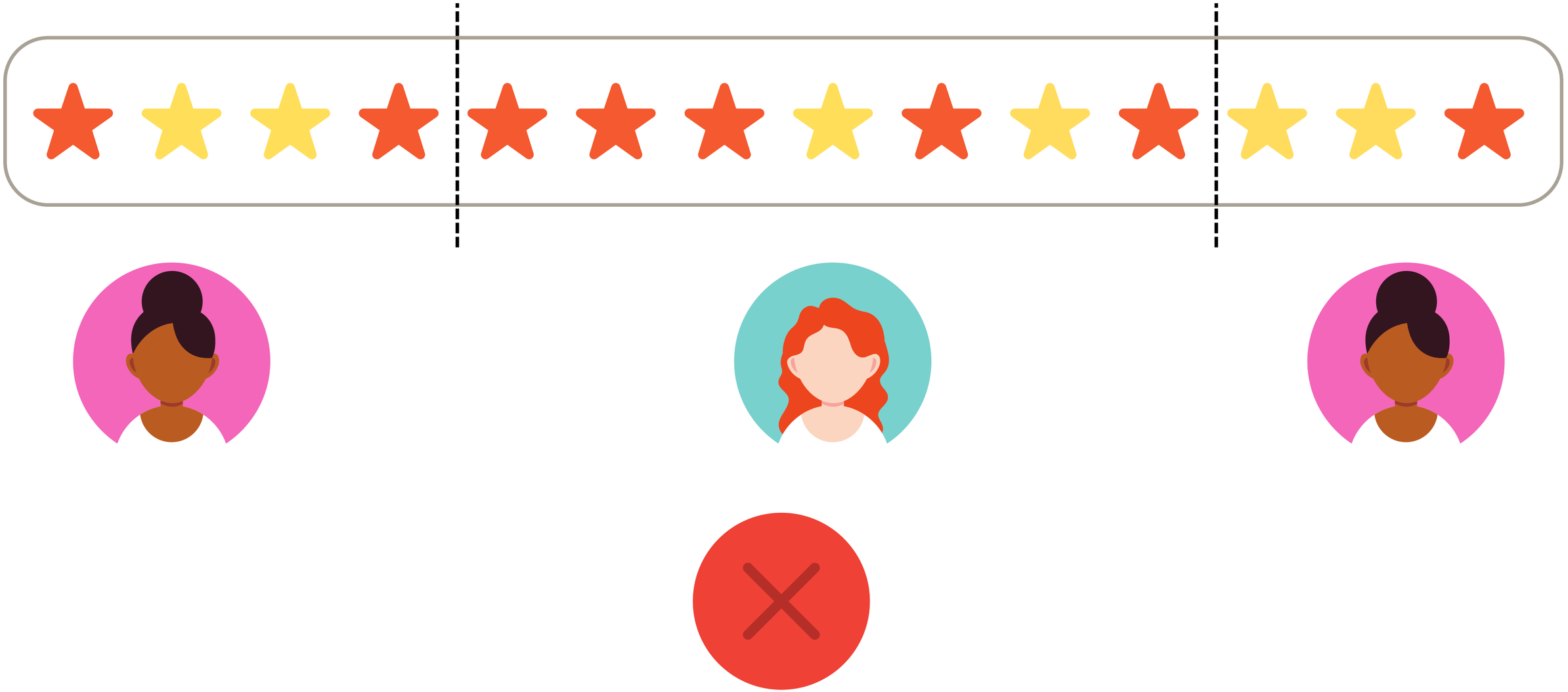

Harmonic functions

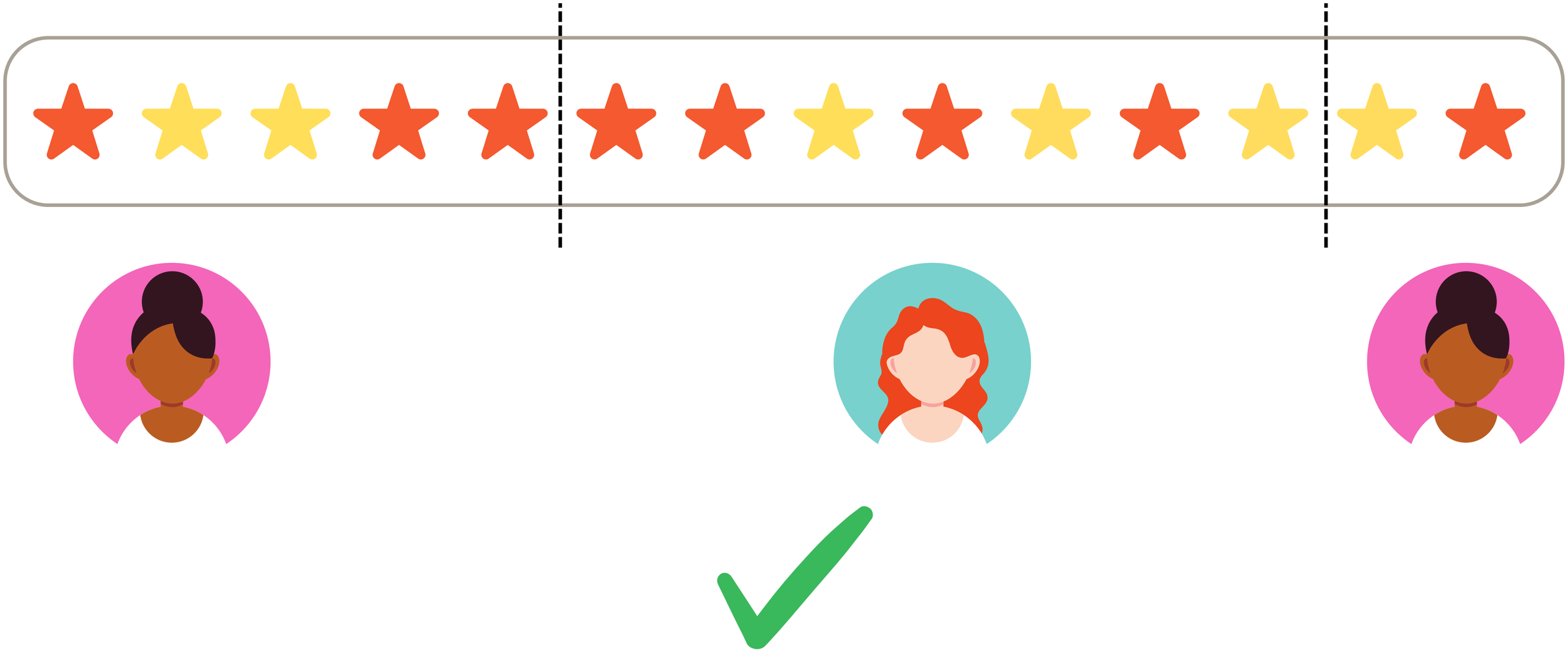
Focusing on one activity

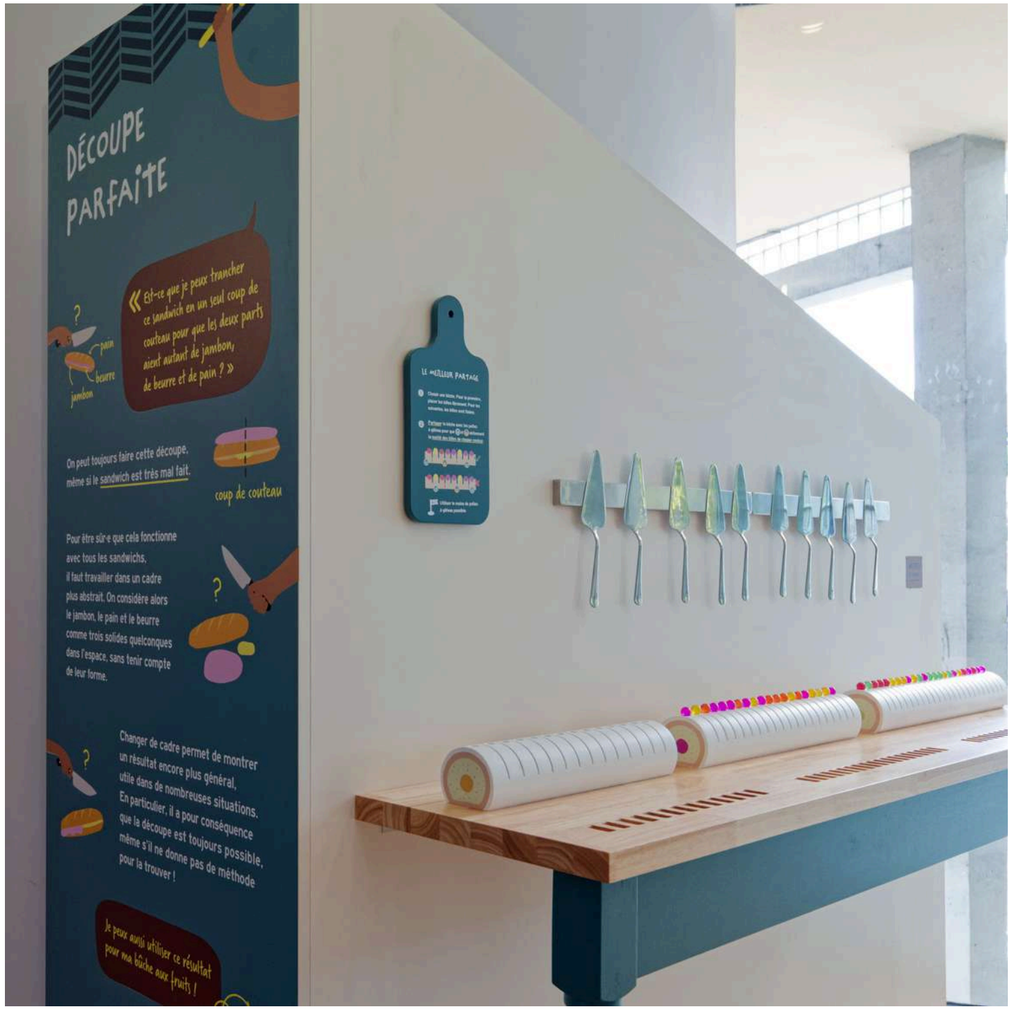











DÉCOUPE PARFAITE
« Est-ce que je peux trancher ce sandwich en un seul coup de couteau pour que les deux parts aient autant de jambon, de beurre et de pain ? »
pain
beurre
jambon
On peut toujours faire cette découpe, même si le sandwich est très mal fait.
coup de couteau
Pour être sûr·e que cela fonctionne avec tous les sandwichs, il faut travailler dans un cadre plus abstrait. On considère alors le jambon, le pain et le beurre comme trois solides quelconques dans l'espace, sans tenir compte de leur forme.
Changer de cadre permet de montrer un résultat encore plus général, utile dans de nombreuses situations. En particulier, il a pour conséquence que la découpe est toujours possible, même s'il ne donne pas de méthode pour la trouver !
Je peux aussi utiliser ce résultat pour ma tâche aux fruits !
LE MEILLEUR PARTAGE

Idea

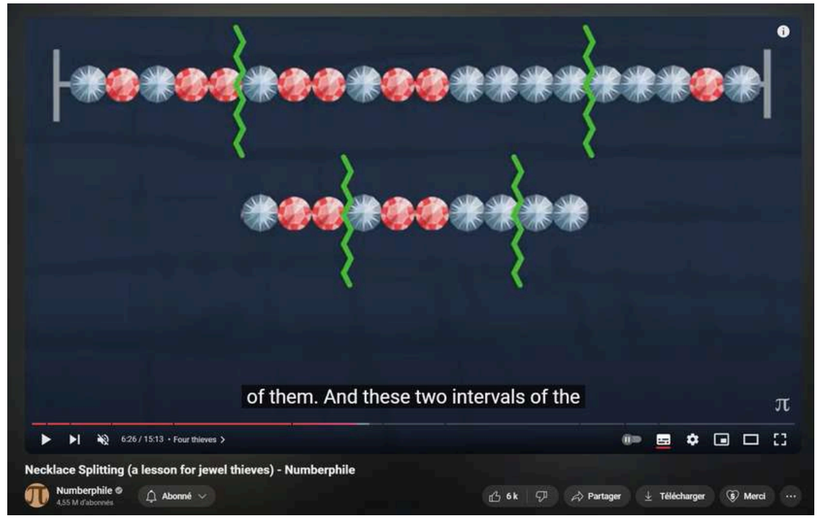
Message

Hands-on

Instance

Technical design

Idea | Message | Hands-on | Instance | Technical design



Échos de la recherche — Retour à la rubrique

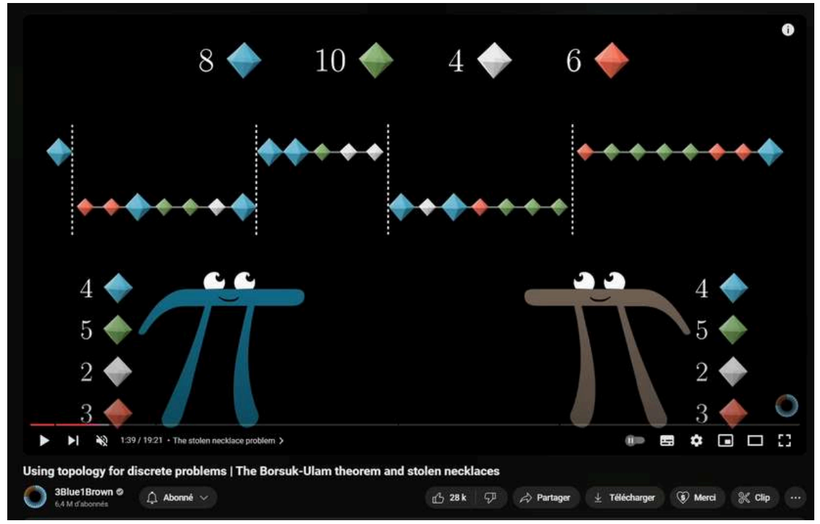
[Rediffusion d'un article publié le 18 août 2016]

LE PROBLÈME DU COLLIER

Piste bleue — Le *17 août 2022* - Ecrit par Meunier, Frédéric

Lire l'article en

Deux voleurs, Alice et Bob, viennent de rafler un magnifique collier, formé de perles de types variés. Arrive le moment de le partager… Le théorème du collier assure qu'un partage équitable va être possible sans avoir à couper la chaînette trop souvent. Simple à énoncer, ce théorème ne connaît cependant pas de preuve élémentaire. Et puis, ce n'est pas parce que l'on sait qu'un tel partage équitable existe qu'il est facile de le déterminer…



Necklace splitting problem

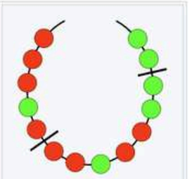
3 languages

Article | Talk — Read | Edit | View history | Tools

From Wikipedia, the free encyclopedia

Necklace splitting is a picturesque name given to several related problems in combinatorics and measure theory. Its name and solutions are due to mathematicians Noga Alon[1] and Douglas B. West.[2]

The basic setting involves a necklace with beads of different colors. The necklace should be divided between several partners (e.g. thieves), such that each partner receives the same amount of every color. Moreover, the number of *cuts* should be as small as possible (in order to waste as little as possible of the metal in the links between the beads).



Example of necklace splitting with $k = 2$ (i.e. two partners), and $t = 2$ (i.e. two types of beads, here 8 red and 6 green). A 2-split is shown: one partner receives the largest section, and the other receives the remaining two pieces.

Variants [edit]

The following variants of the problem have been solved in the original paper:

1. **Discrete splitting**:[1]:Th 1.1 The necklace has $k \cdot n$ beads. The beads come in t different colors. There are $k \cdot a_i$ beads of each color i, where a_i is a positive integer. Partition the necklace into k parts (not necessarily contiguous), each of which has exactly a_i beads of color i. Use at most $(k-1)t$ cuts. Note that if the beads of each color are contiguous on the necklace, then at least $k-1$ cuts must be done inside each color, so $(k-1)t$ is

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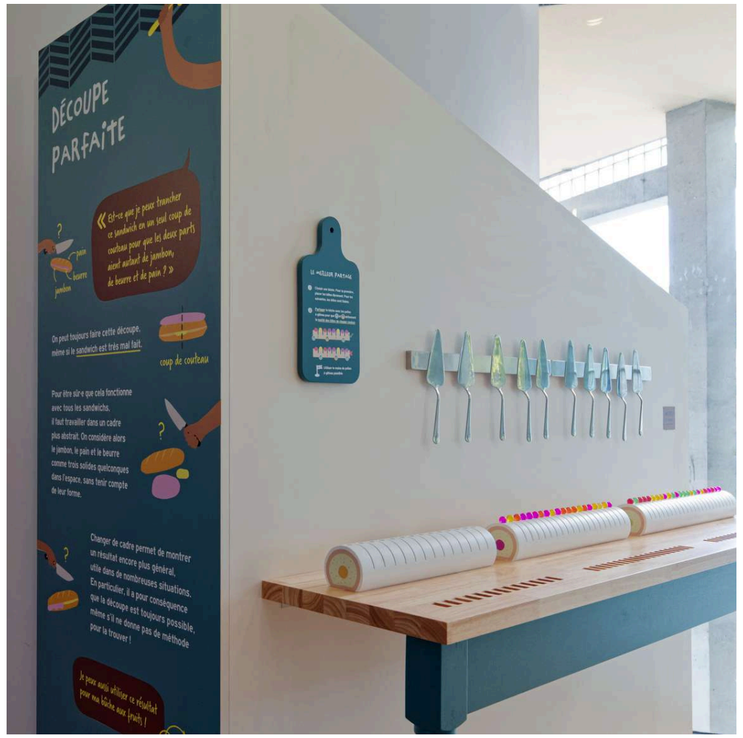

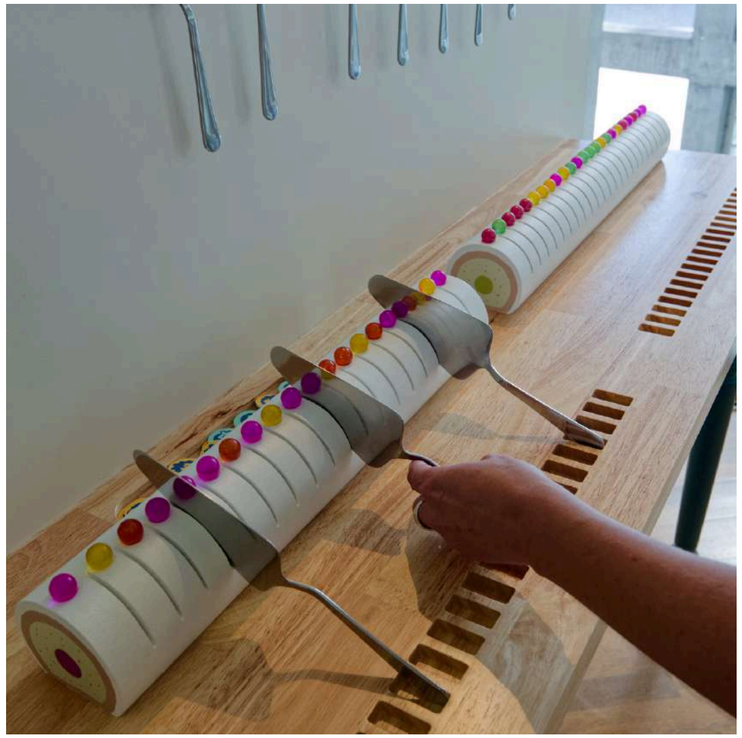

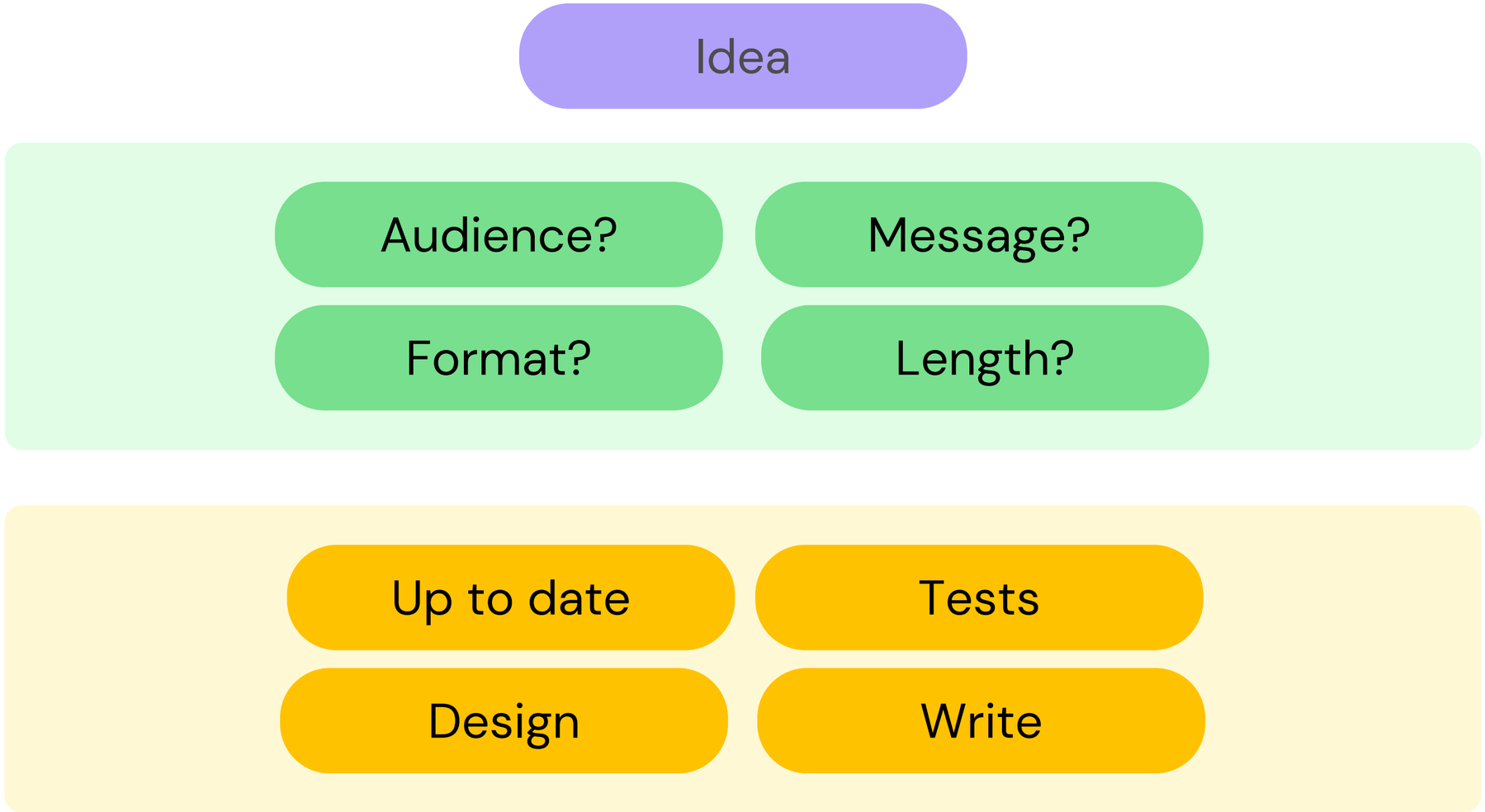
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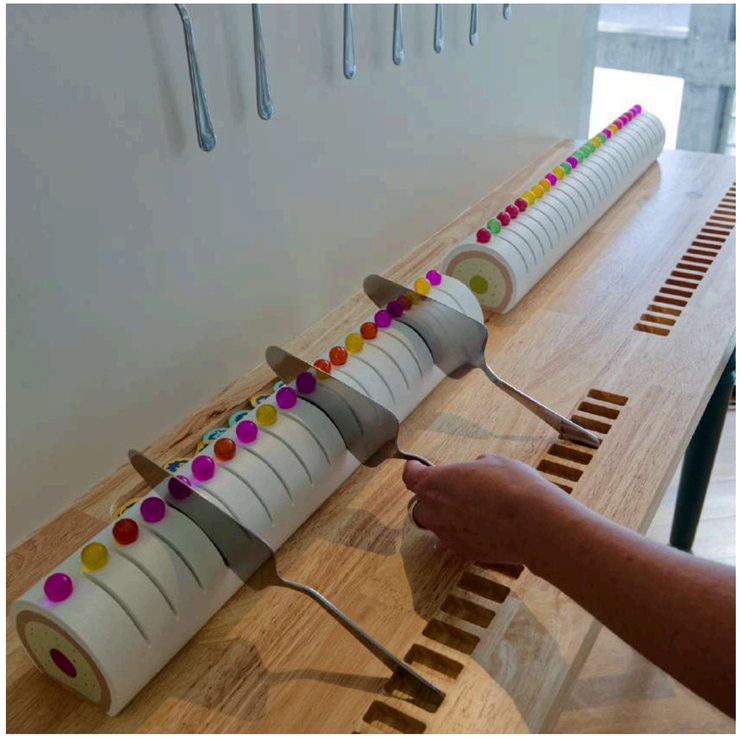
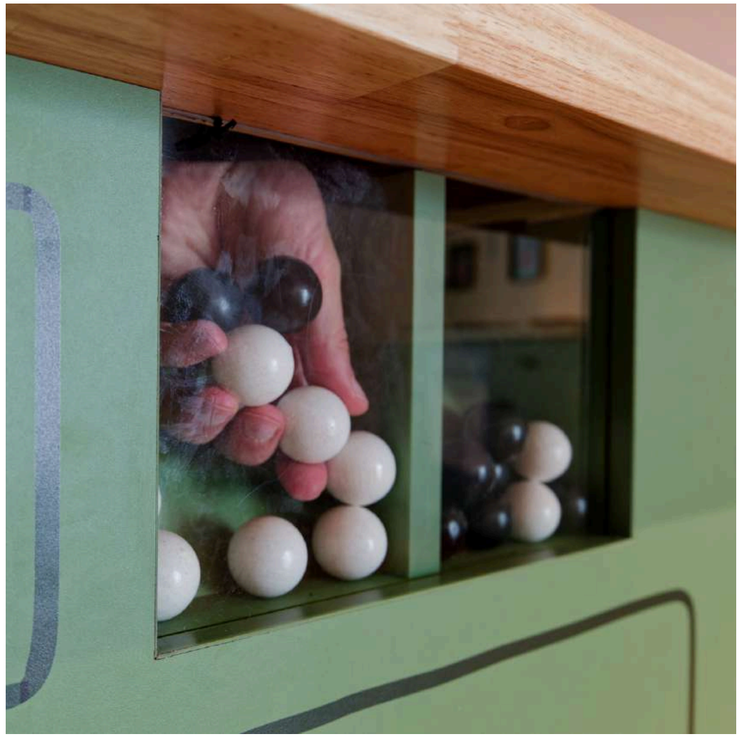
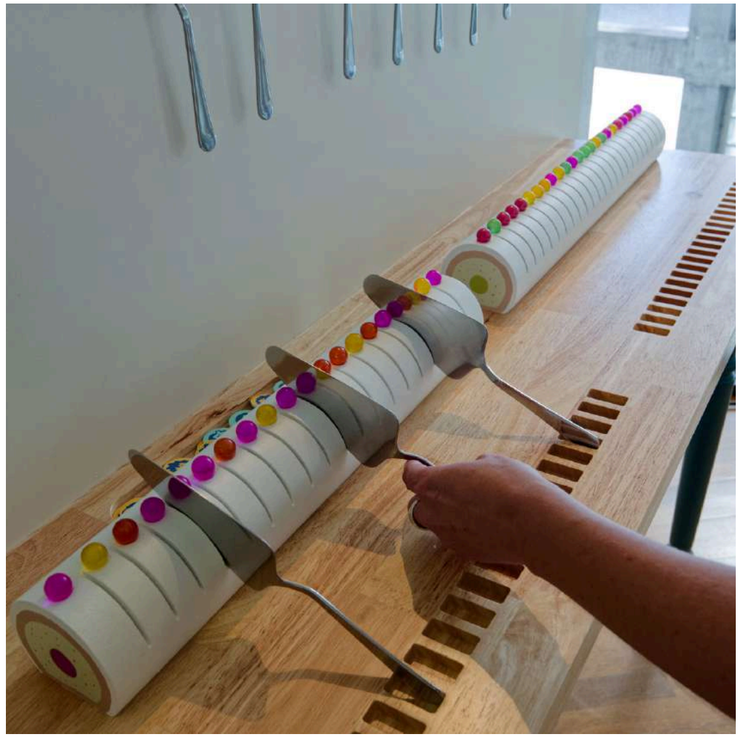
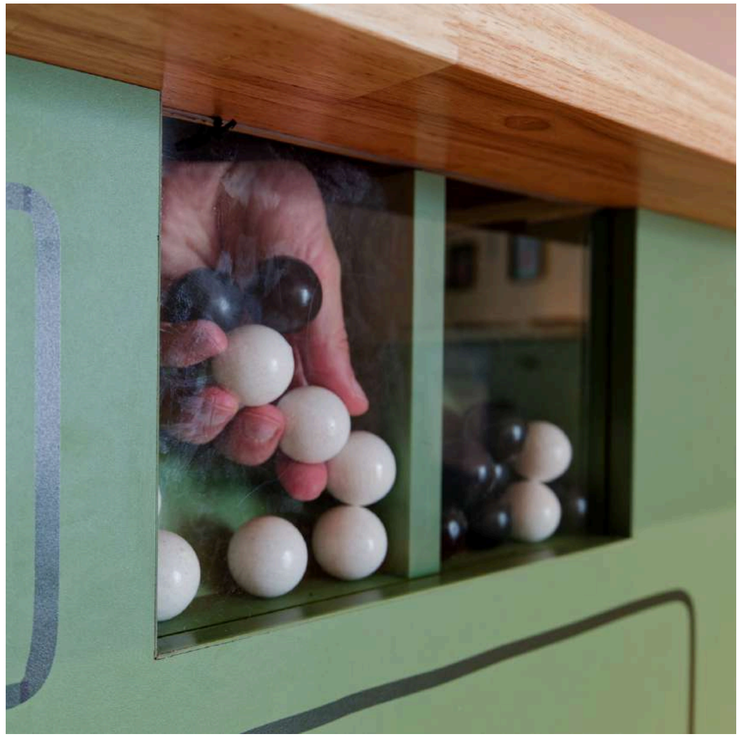




If there's something funnier to do, a student will do it.





Thank you!