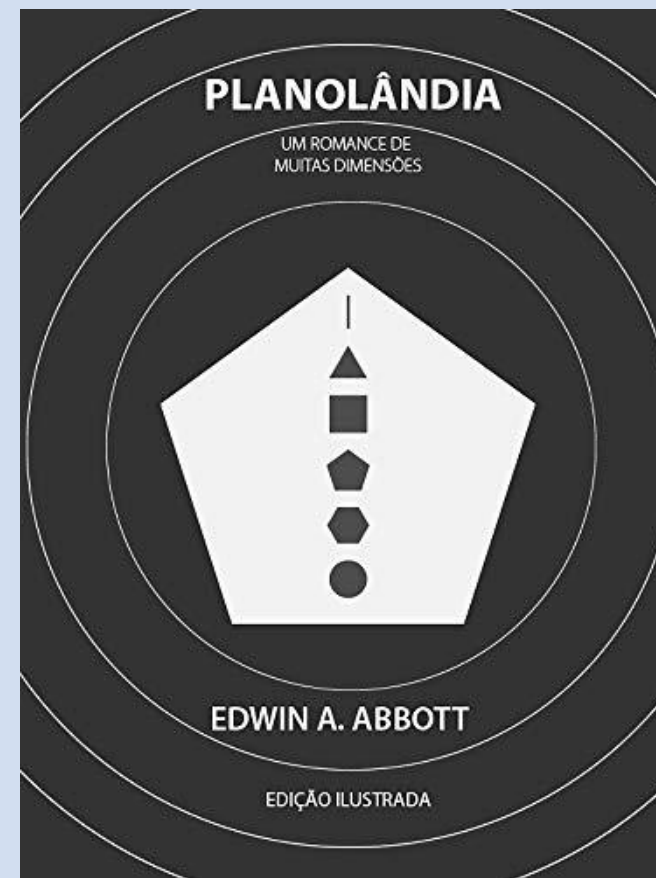
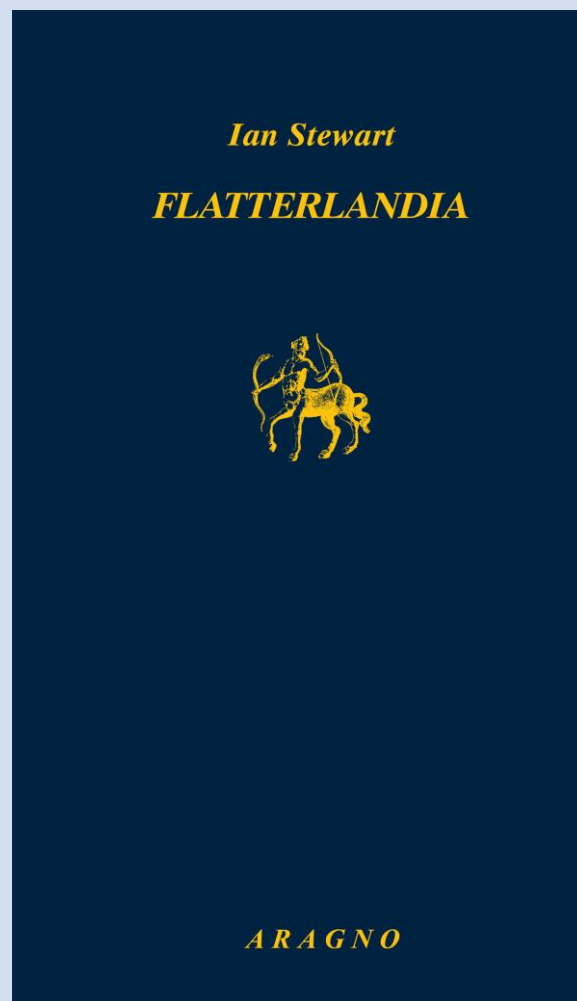


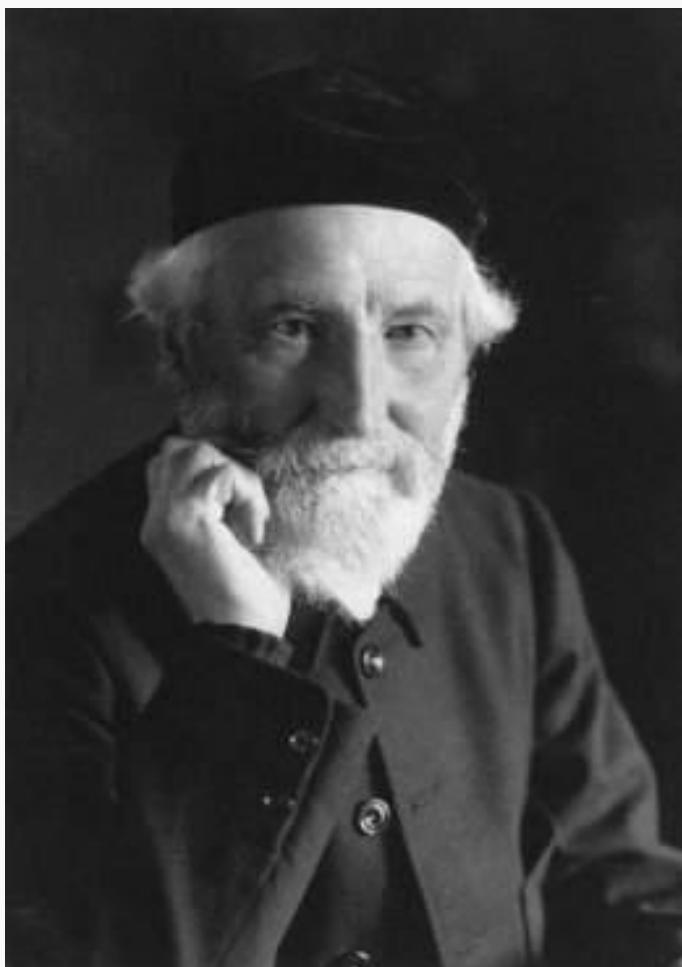
Planolândia

-Uma viagem interestespacial-

Inspirado no(s) livro(s)...



Sobre o autor...



Edwin Abbott Abbott

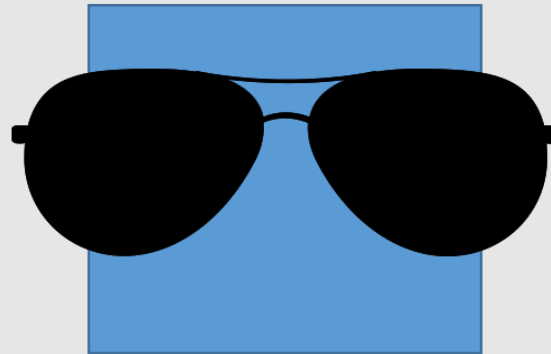
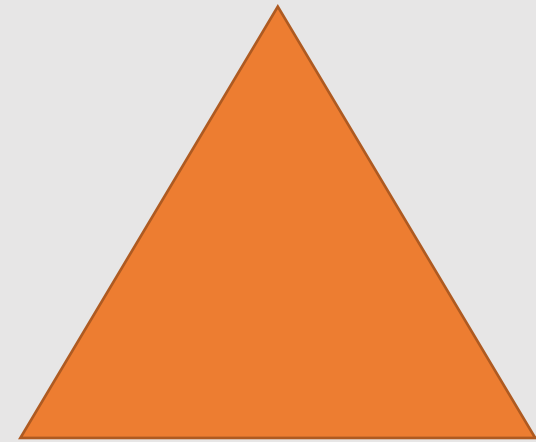
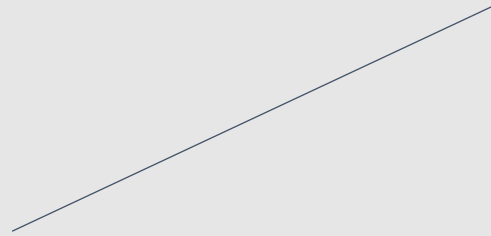


Nascimento	20 de dezembro de 1838 Londres
Morte	12 de outubro de 1926 (87 anos)
Nacionalidade	 Inglês
Ocupação	Escritor
Prêmios	Prêmio Smith (1861) ^[1]

**Era
uma
vez....**



**Em Planolândia, cenas
como essa são comuns...**



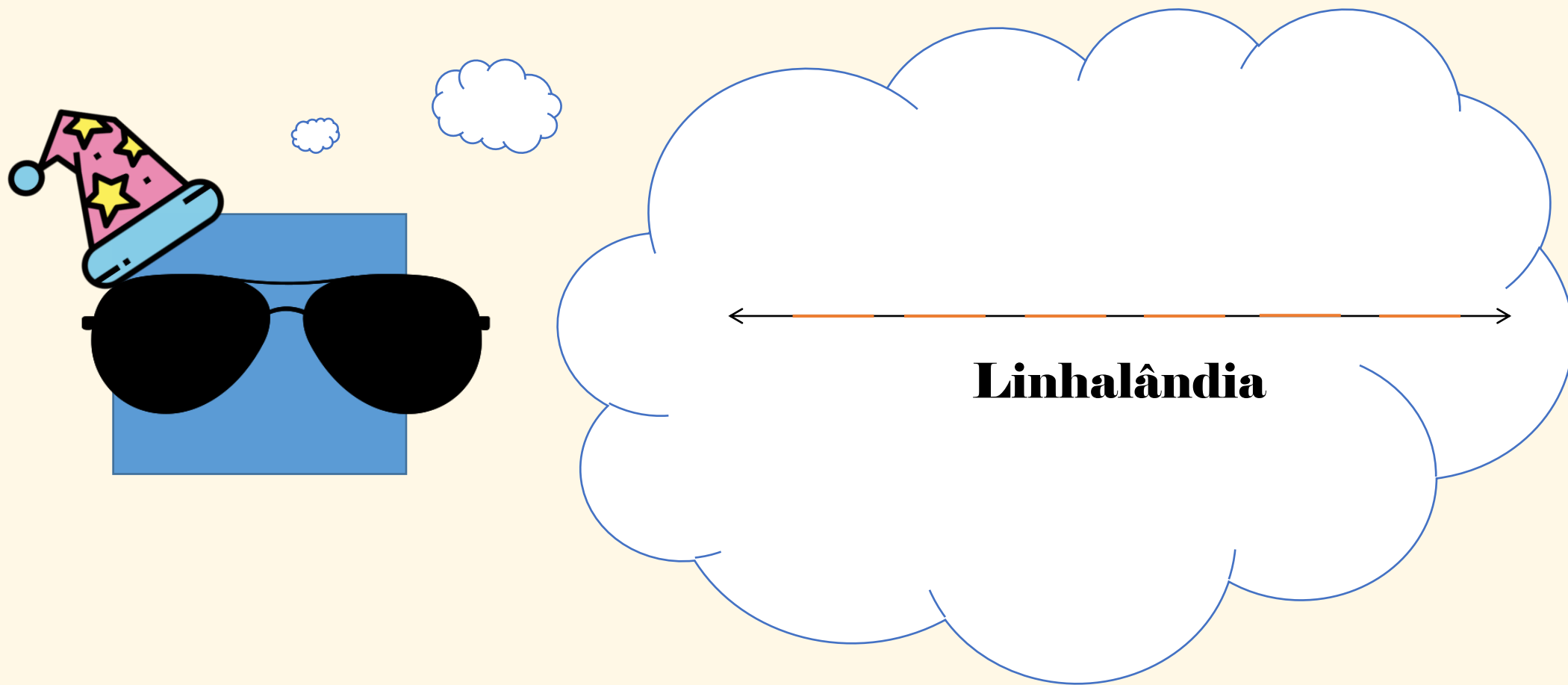
Sr. Quadrado



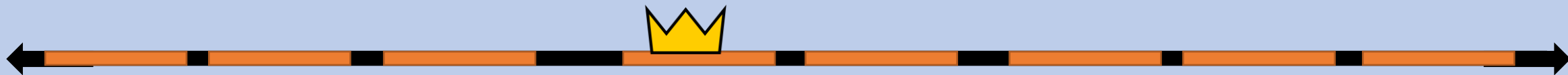
Na verdade, cenas como essa são comuns....

...do ponto de vista do quadrado.

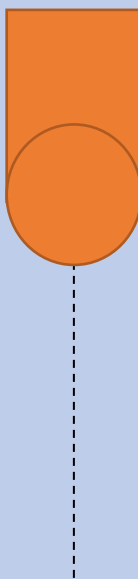
Certo dia, quadrado dormiu e teve um sonho estranho...



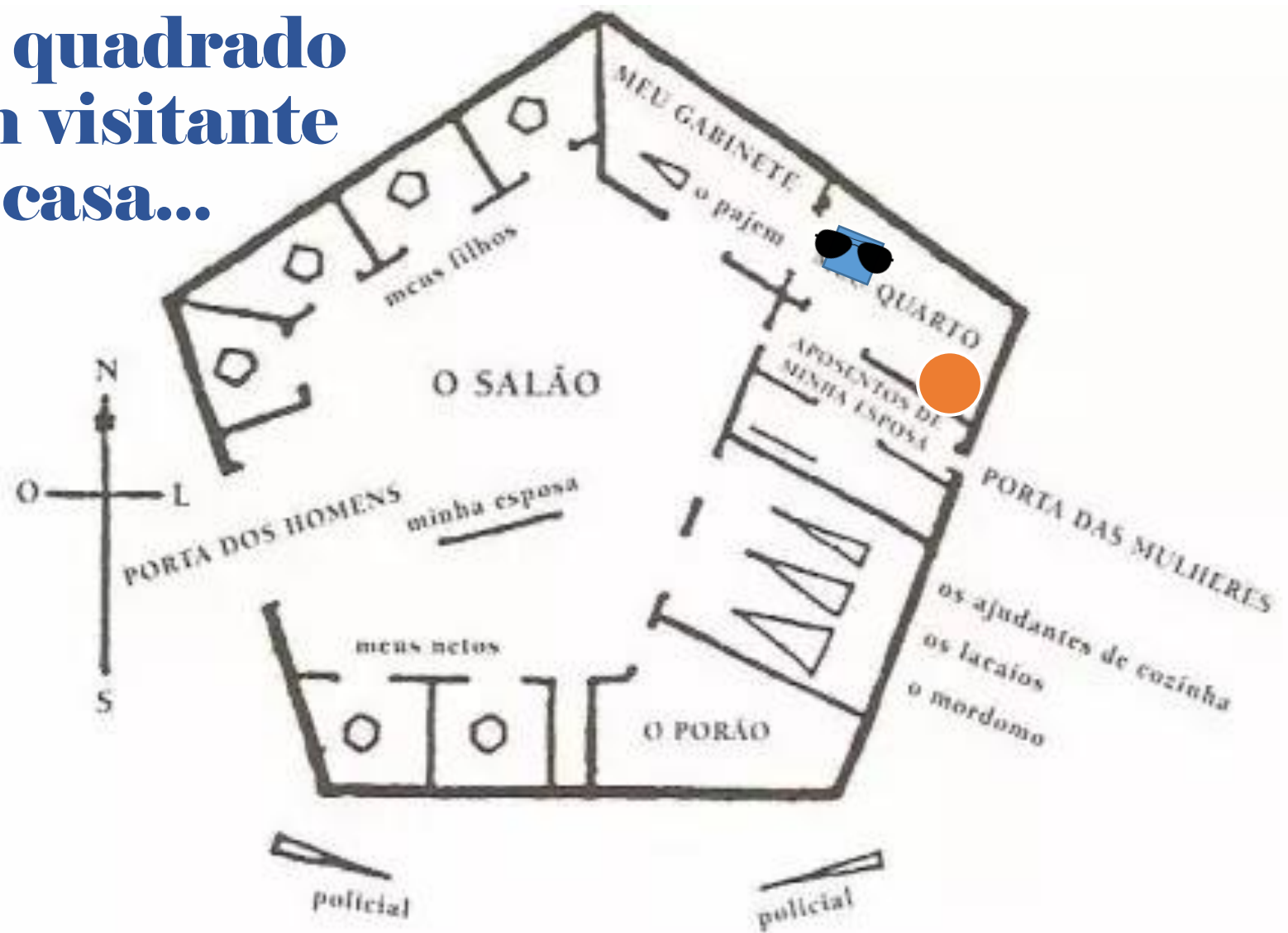
A visão do quadrado sobre Linhalândia:

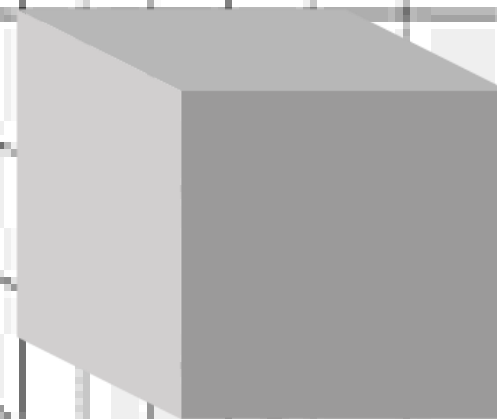
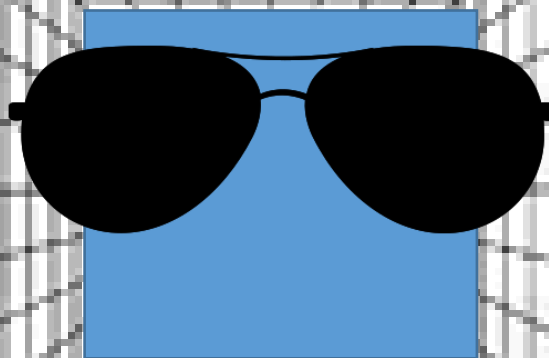
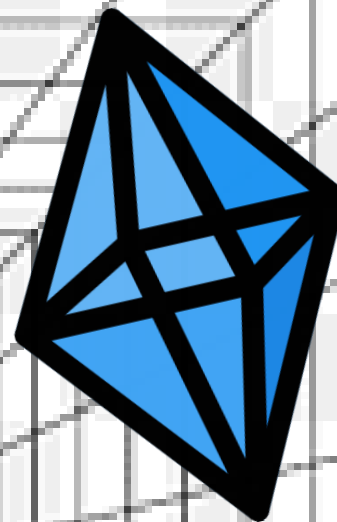
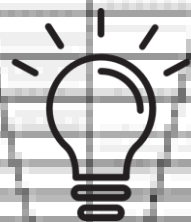
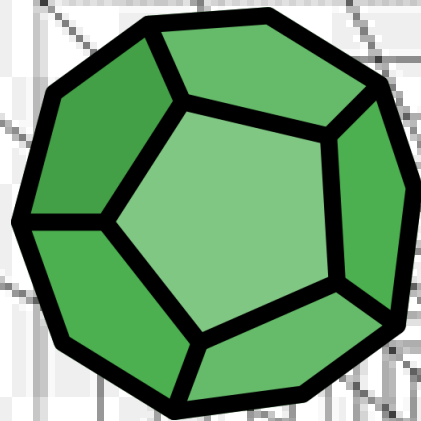
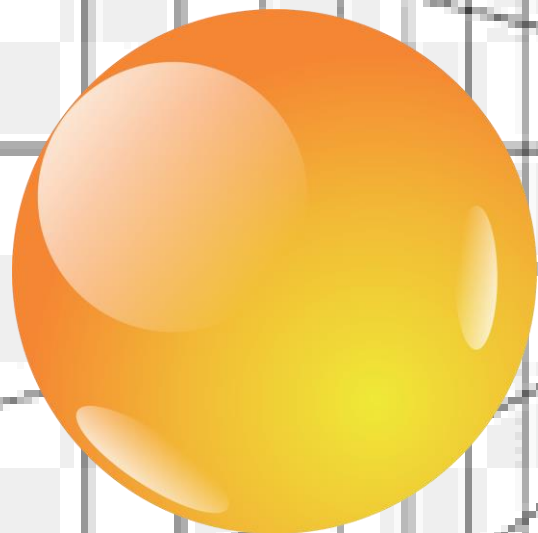


A visão do rei sobre o seu mundo:



**Voltando, o quadrado
recebeu um visitante
em sua casa...**





ESPAÇOLÂNDIA!!!



**E SE...
EXISTIR ALGO
ALÉM DE
ESPAÇOLÂNDIA?**

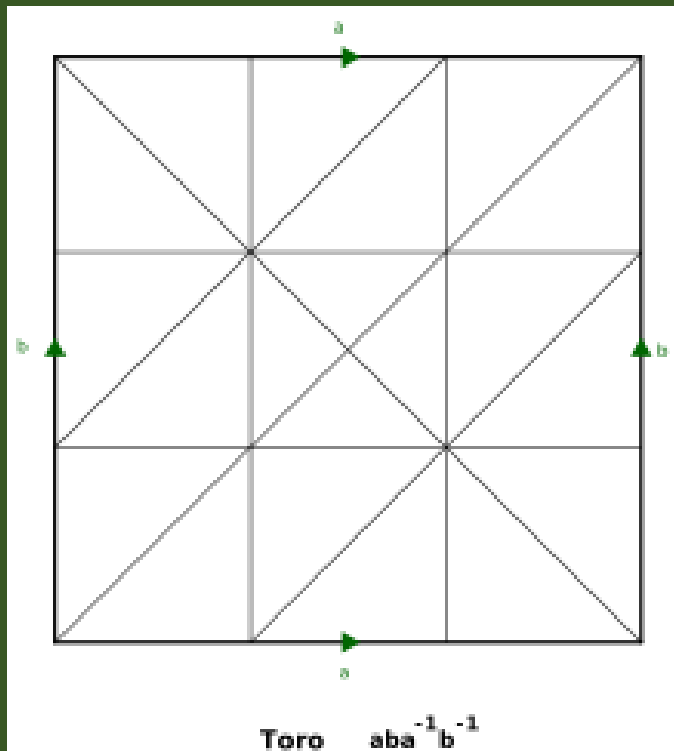
A large, ornate wooden bookshelf filled with many books, with one door open in the center. The shelves are packed with books of various sizes and colors, mostly in shades of brown and gold. The lighting is warm and focused on the open door, which reveals a glimpse of a blue sky and a window frame outside. The overall atmosphere is one of a grand, old library.

**Podemos visualizar
a quarta dimensão?**

**Não, mas
podemos ter
uma ideia...**

Materiais necessários: Tesoura & Cola!

No $\mathbb{R}^2$:



Podemos fazer umas brincadeiras...

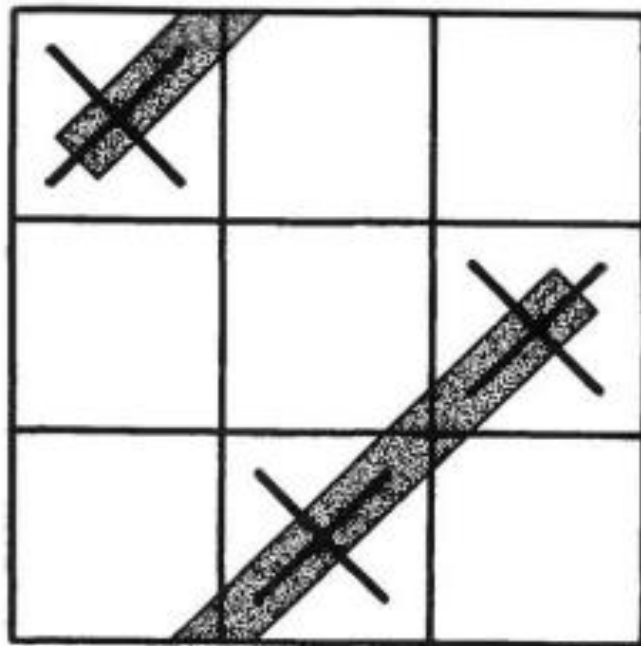


Figure 2.2 These Xs are three-in-a-row if the board is imagined to represent a torus.

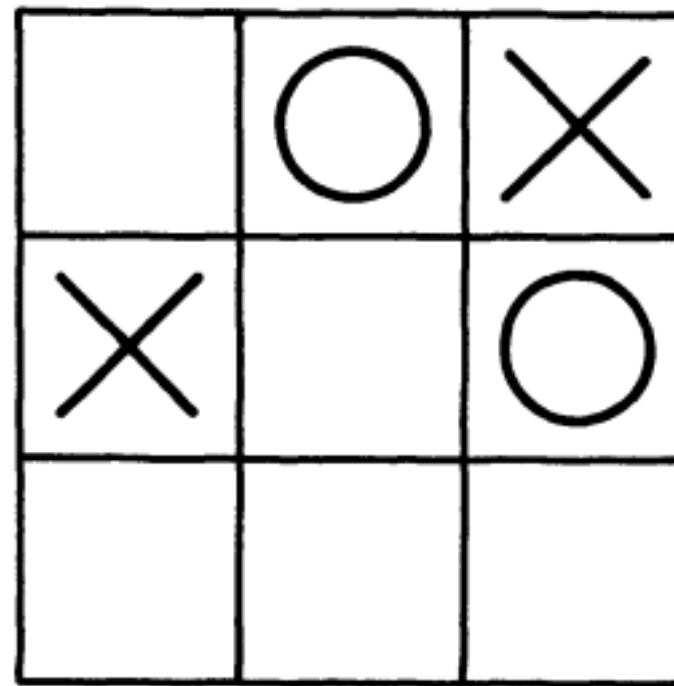
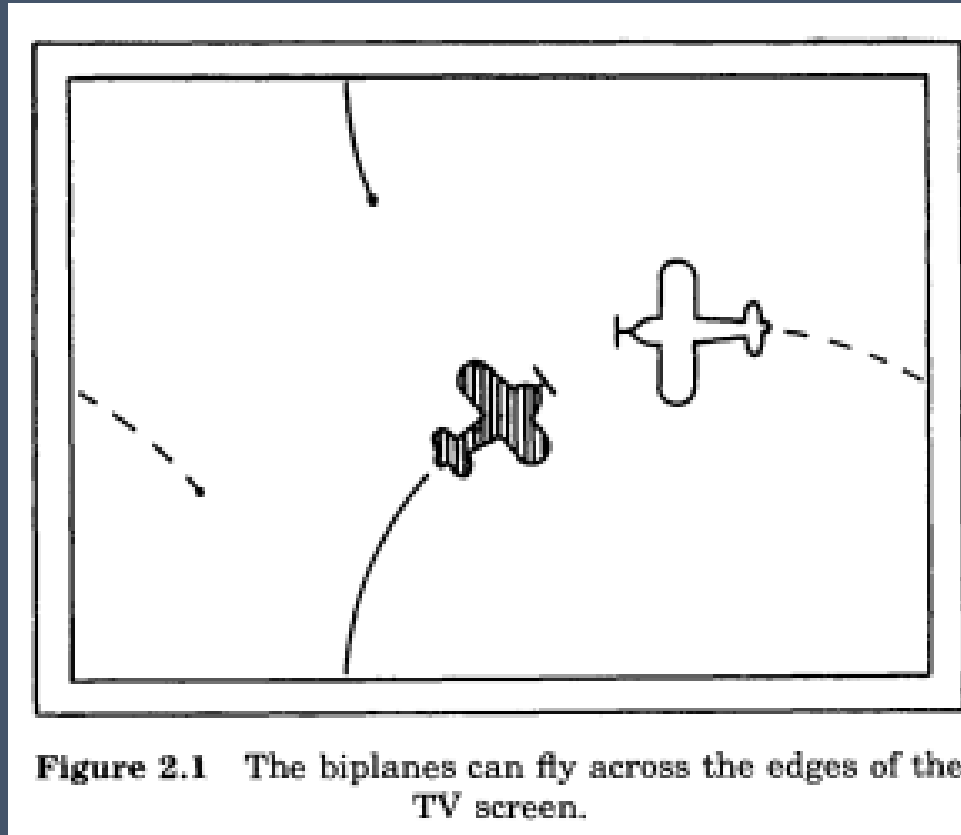


Figure 2.3 What is X's best move? What is O's best move?

E podemos usar em situações reais!



Voltando a quarta dimensão...

$$\vec{v} = (v_1, v_2, v_3, v_4)$$

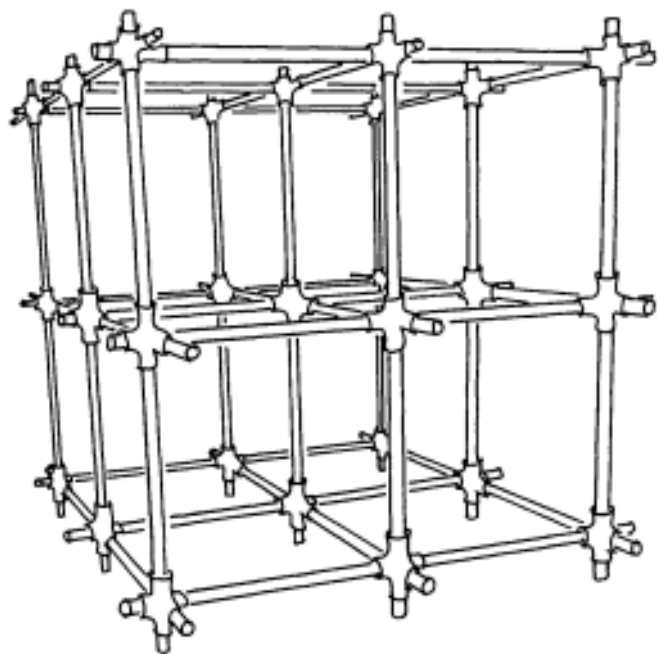


Figure 2.9 A section of jungle gym.

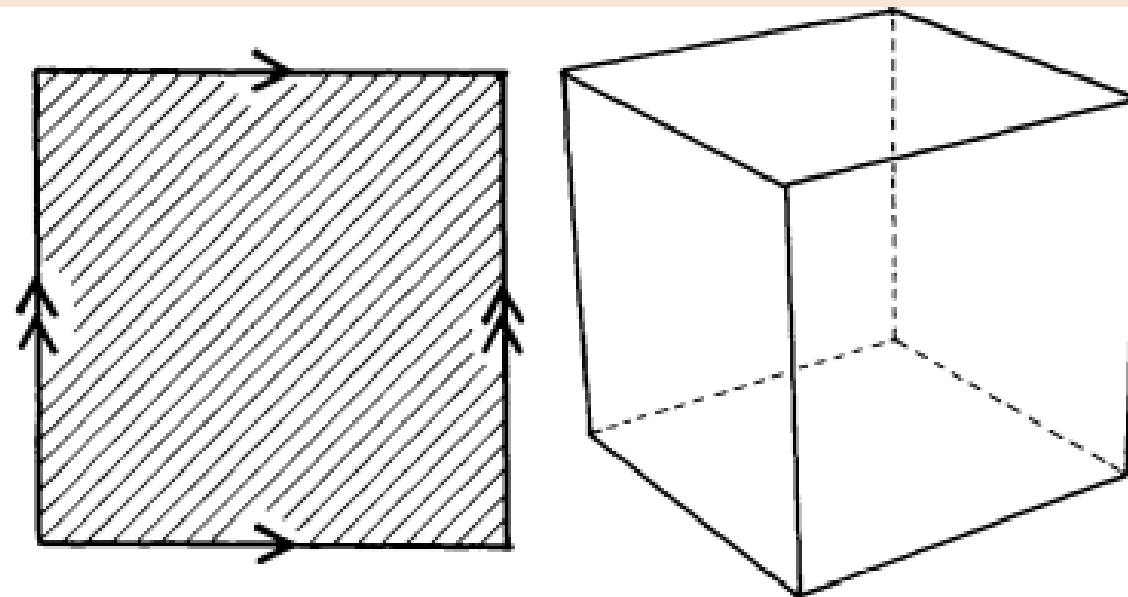
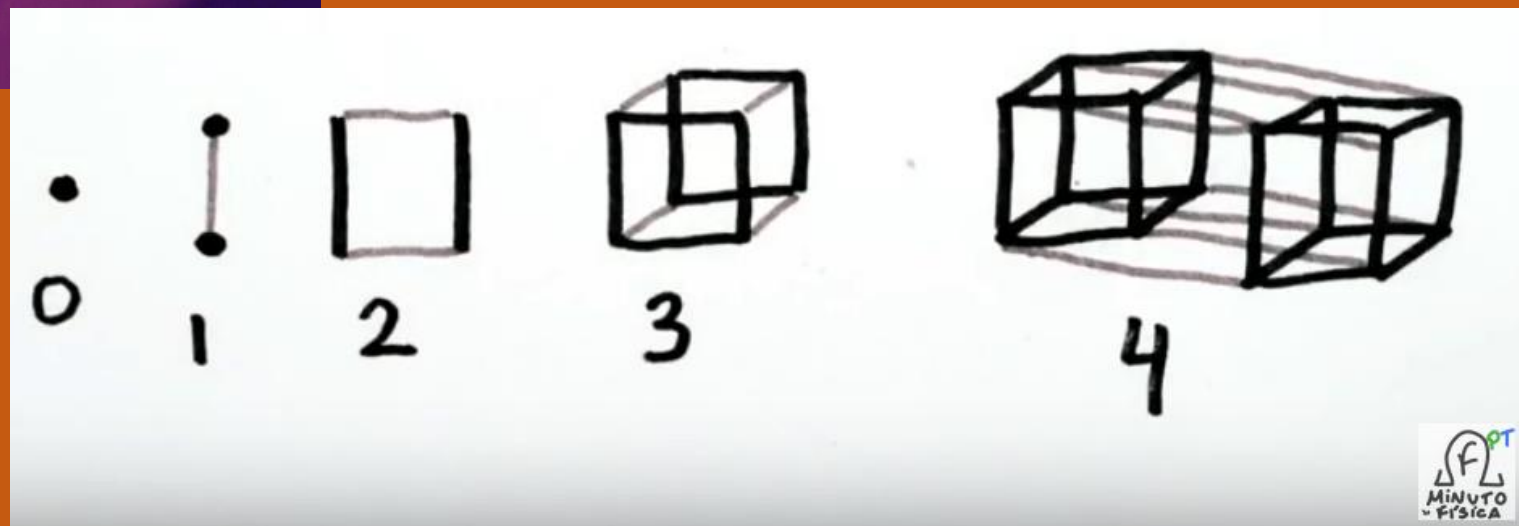
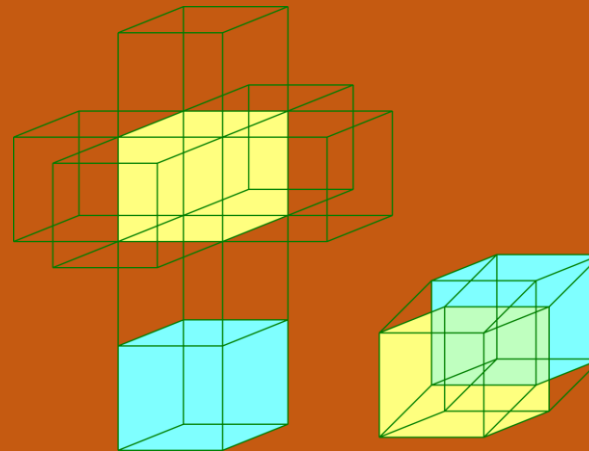
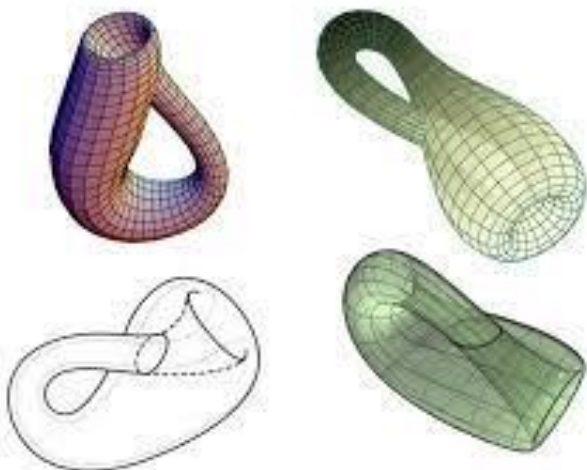


Figure 2.10 Representation of a flat two-dimensional torus (left) and a three-dimensional torus (right).

TEORIAS DA CONSPIRAÇÃO!!

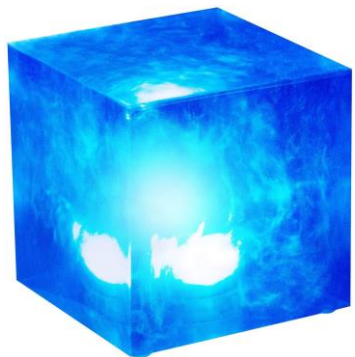


quatro imagens do planeta Terra que te farão dizer
"isso não é a Terra, são garrafas de Klein"

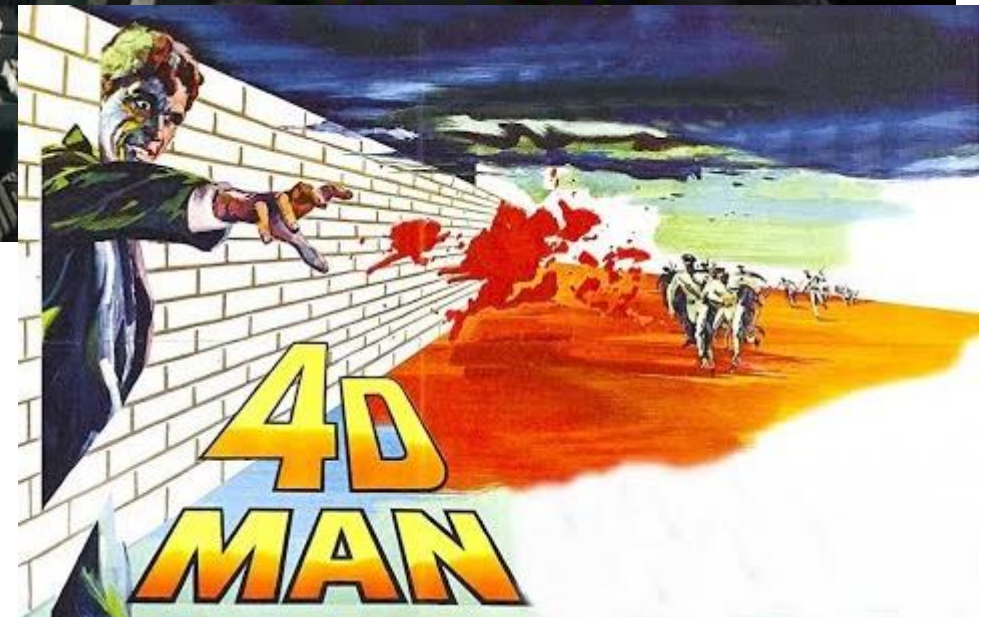




Homem-Aranha: Sem volta pra casa (2021)



Referências do mundo POP



Yakoi Kusama - 2018



Extra: Carl Sagan cita Planolândia!



A 4ª dimensão é muito importante para os físicos:
O TEMPO

Referências

Livros já mencionados +



Vídeo do Carl Sagan sobre a quarta dimensão:
<https://www.youtube.com/watch?v=pLqi0EKHVRQ>

