Will you join in?

World Maths Year 2020

Or maybe 2025? - a possible legacy for this MATRIX conference

Please bring your ideas to an Open Meeting

Auditorium 1: 1pm on Friday

John Bibby: worldmathsyear@gmail.com

MATRIX

Turning Museums Inside-Out:

"Maths on Your Doorstep"

& *World Maths Year 2020 ?*

John Bibby *johnbibbyjohnbibby@gmail.com*

MAT
RIX

MatheMagic

Three messages:

1. Turn museums "*inside-out*"

2. Work *NOW* for World Maths Year 2020 (WMY2020)
   - *an important legacy from this MATRIX conference*

3. Social equity

meet math متحف الرياضيات

MOMATH
NATIONAL MUSEUM OF MATHEMATICS
momath.org

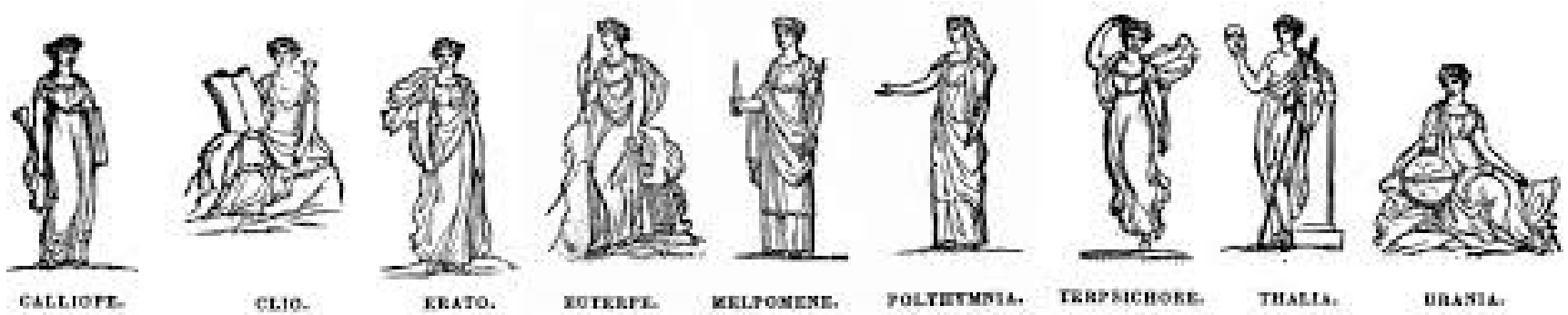
mathematikum
Mathematik zum Anfassen.

MATHSWORLDUK
The Museum of Mathematics in the UK

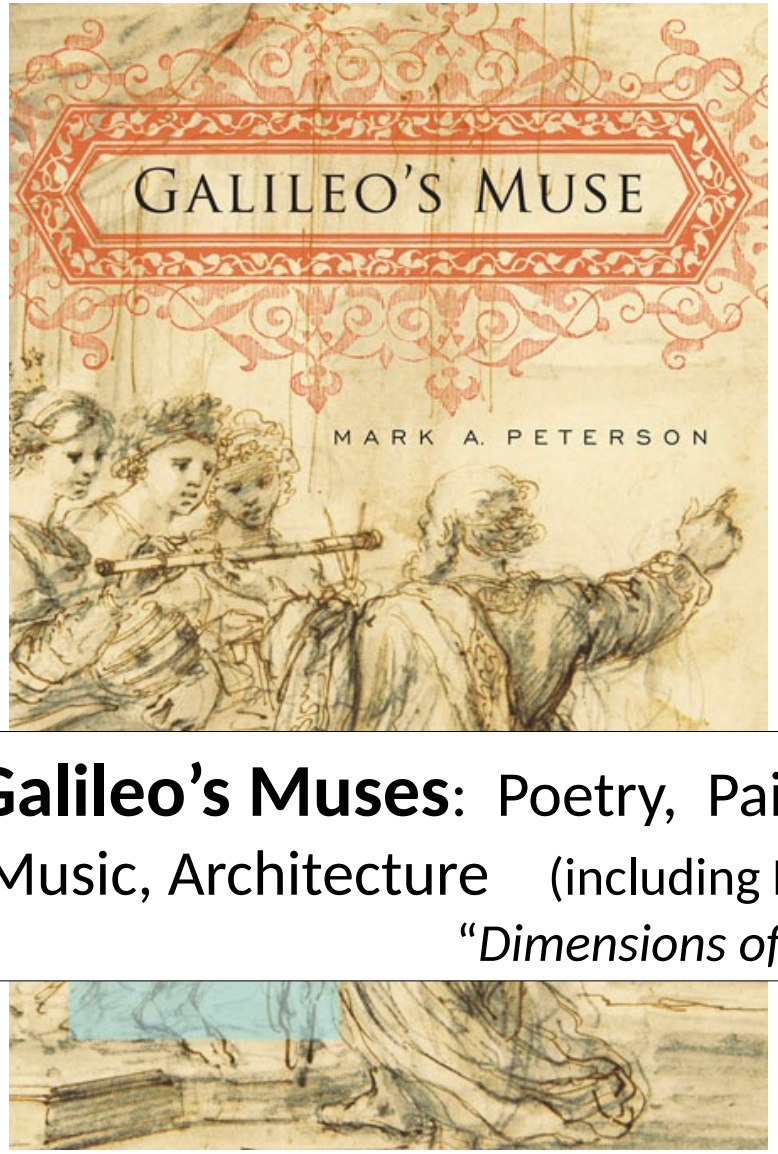
Maths in a Van

THE GARDEN OF ARCHIMEDES
a museum for [mathematics]

Museum =



"a place or temple dedicated to the muses"



Galileo's Muses: Poetry, Painting, Music, Architecture (including Dante's "*Dimensions of Hell*"!)

Mark Peterson (2011) *Galileo's Muse*. Harvard University Press.

Contents:

Poetry

3. The Plan of Heaven 69
4. The Vision of God 81

Painting

5. The Power of the Lines 99
6. The Skin of the Lion 125

Music

7. The Orphic Mystery 153
8. Kepler and the Music of the Spheres 174

Architecture

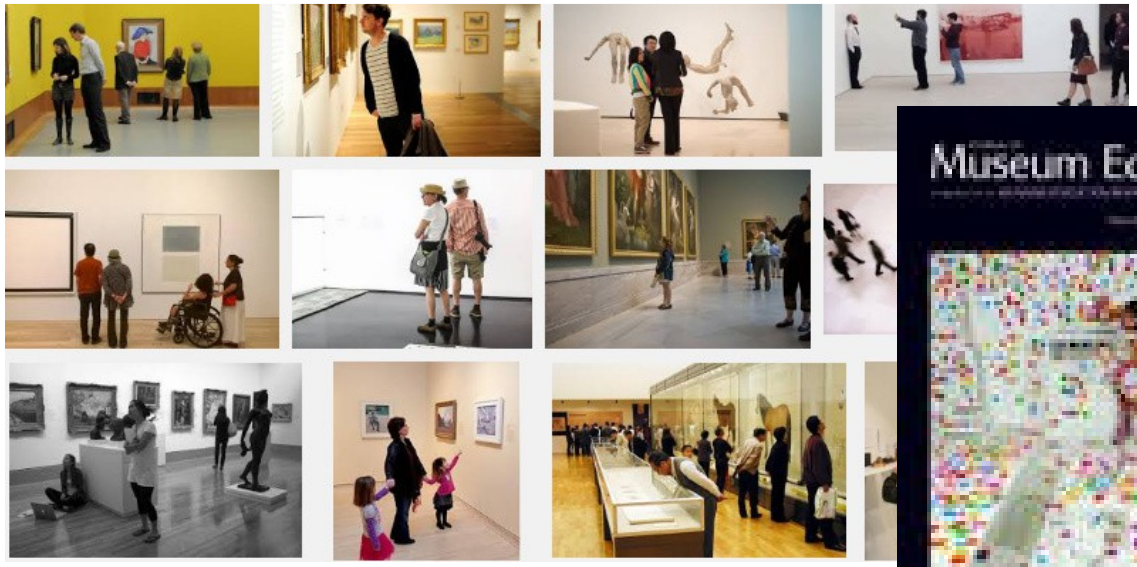
9. Figure and Form 203
10. The Dimensions of Hell 214

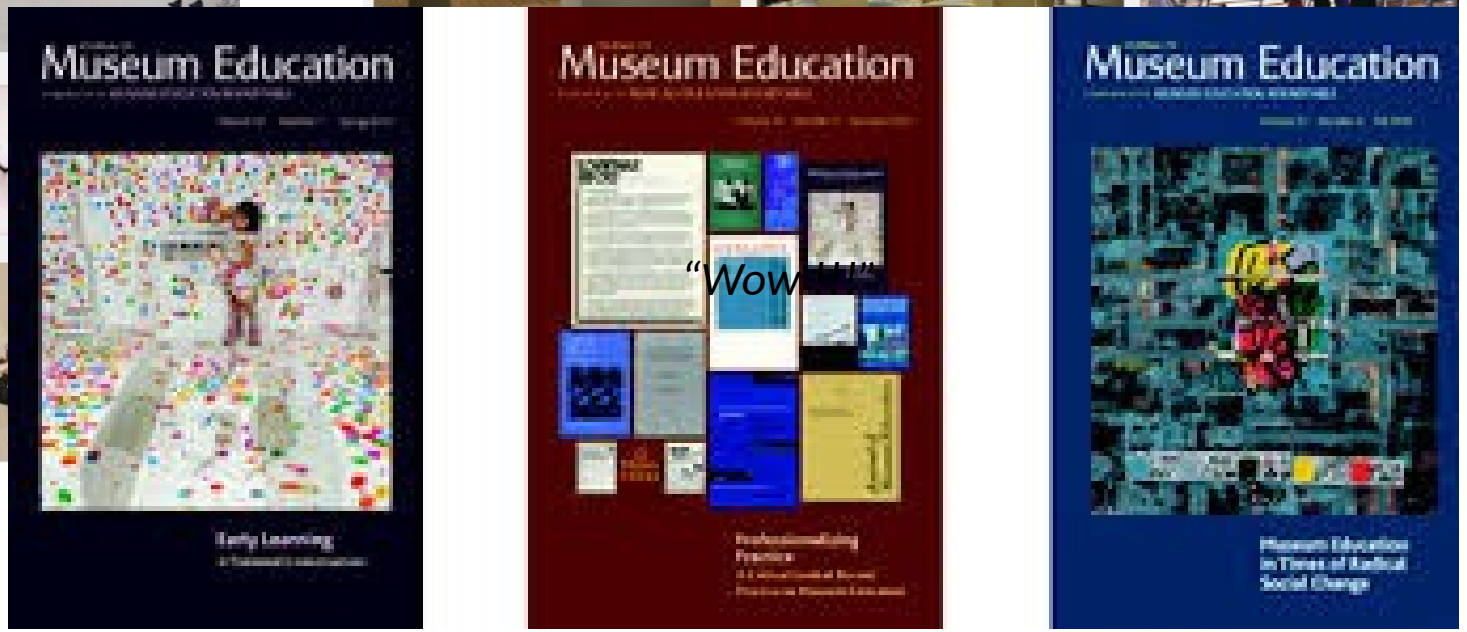
What are our (a)muses?

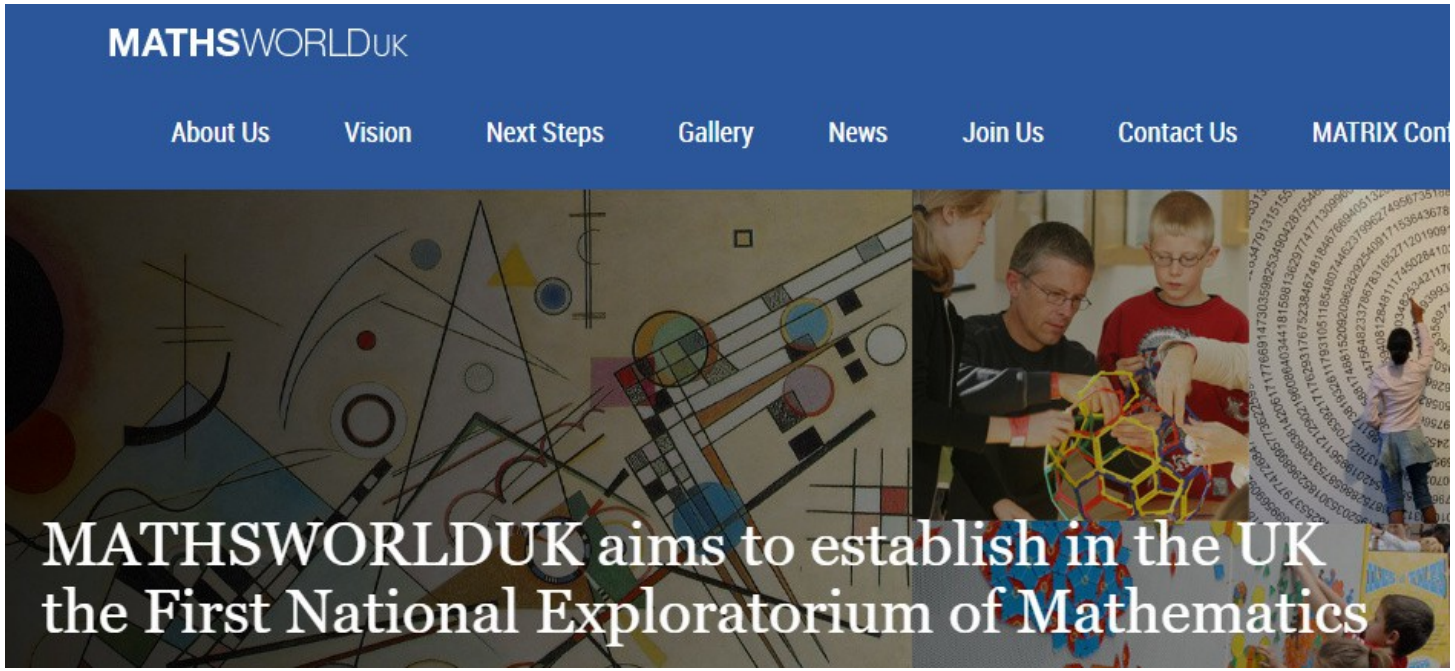
- **Agora**: the outside (or “NOW!” in Portuguese)
- **Humora**: the joker (outside the box)
- **Ludora**: play

Museums: the standard model

1. a building *("Wow!")*
2. visitors *("You visit us")*
3. objects *("Collections")*
4. education *("You learn. We teach.")*





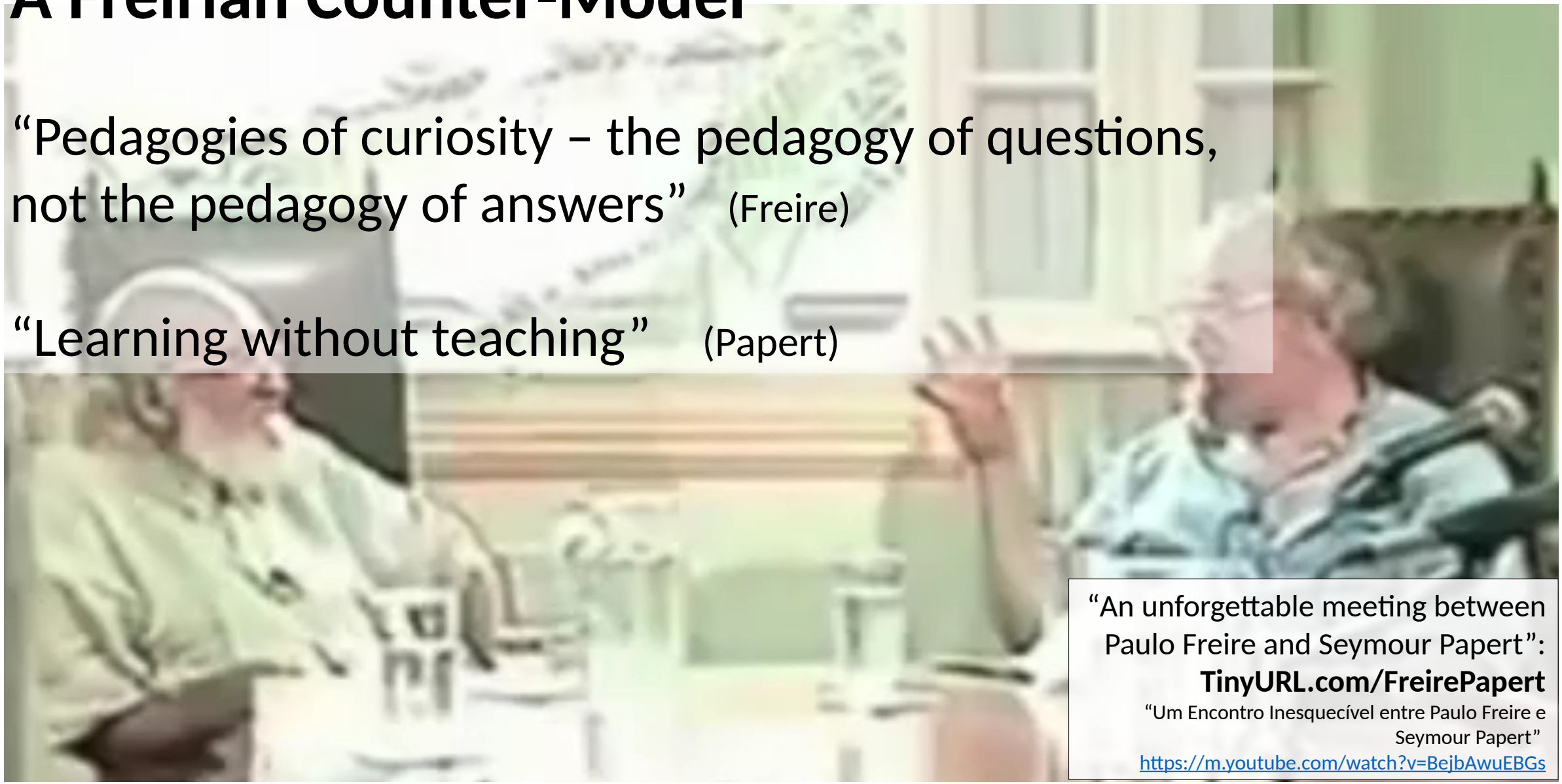


MATHSWORLDUK

A Freirian Counter-Model

“Pedagogies of curiosity – the pedagogy of questions, not the pedagogy of answers” (Freire)

“Learning without teaching” (Papert)



“An unforgettable meeting between Paulo Freire and Seymour Papert”:
TinyURL.com/FreirePapert
“Um Encontro Inesquecível entre Paulo Freire e Seymour Papert”
https://m.youtube.com/watch?v=BejbAwuEBGs

Museums: the “inside-out” model

“Computer Bus” (MatheMagic, York, 2000)

1. mobile *(“non-standard learning environments”)*
2. “on **your** doorstep” (“*We visit you*”)
3. activities, not objects
4. social (peer) learning
5. follow-up

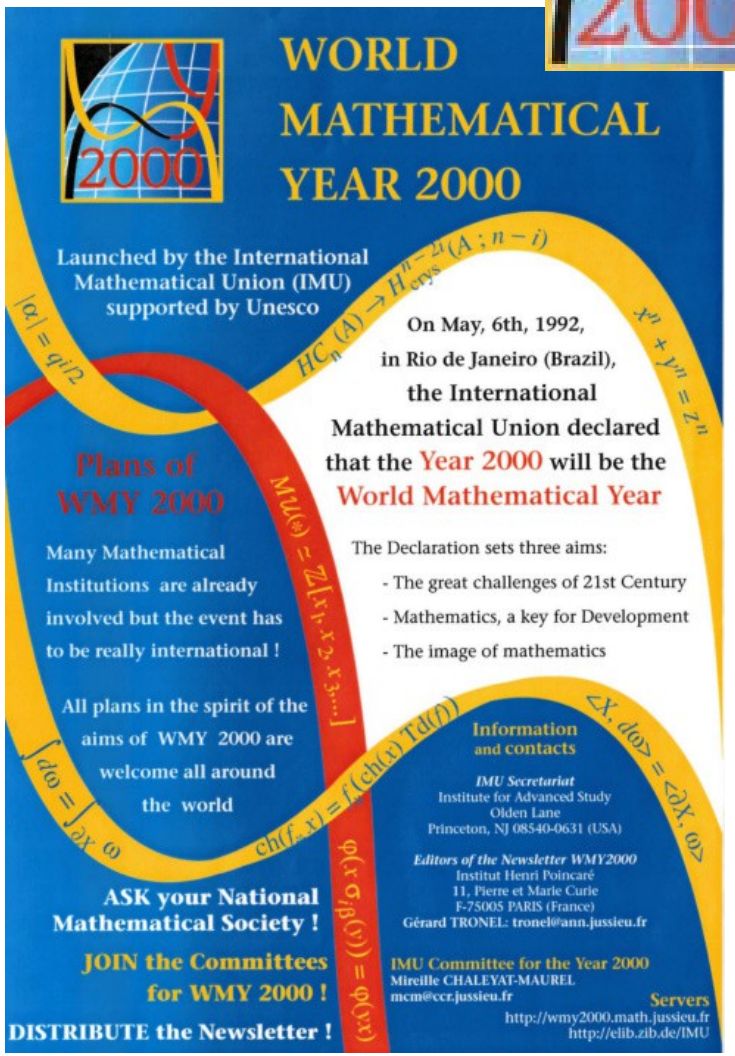
Venues for Homeless, Special Needs, Offenders, Drug Users, pubs, cafes, Bus/Rail vehicles & interchanges, streets, Agricultural shows, Malls, Car boot sales, …

MatheMagic

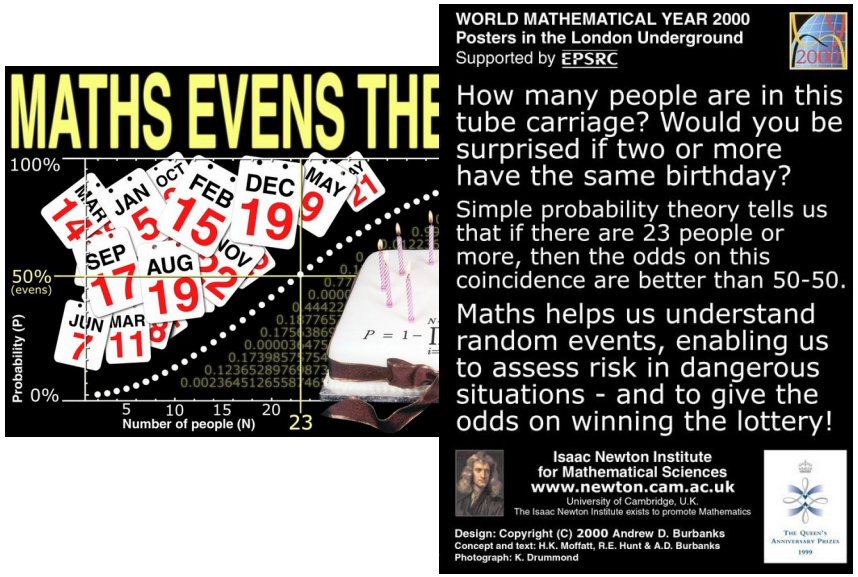
“Meet Math” – the Palestine Maths Museum at Al Quds

Was traditional, but forced to go mobile by Israeli wall which cut off catchment area.

Examples from World Maths Year 2000
and Maths Year 2000 / Count On … !



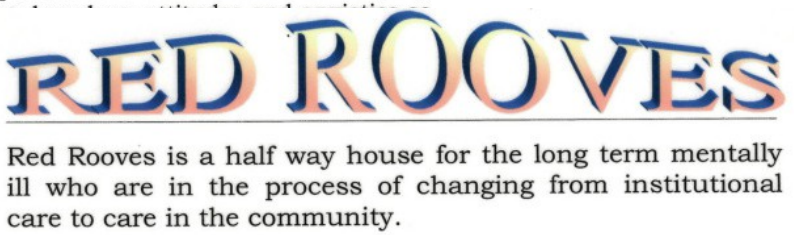
Blair, Vorderman, and other corporate animals!



<u>Out of the silo</u> (1): Physical silos

(Get out of the building: build bridges to "*Non-standard learning environments*")

- On the buses / On the train (and stations and stops)
- In the home (care-homes, Arclight, Hebden Rise)
- On the street (youngsters, offenders, homeless people)
- Cafes & pubs: beermat(h)s, quizzes, napkins, tablecloths incl. origami
- Sports arenas: MathFests at Leeds United & Manchester City
- Shopping malls
- Car boot sales



<u>Out of the silo</u> (2): Intellectual silos

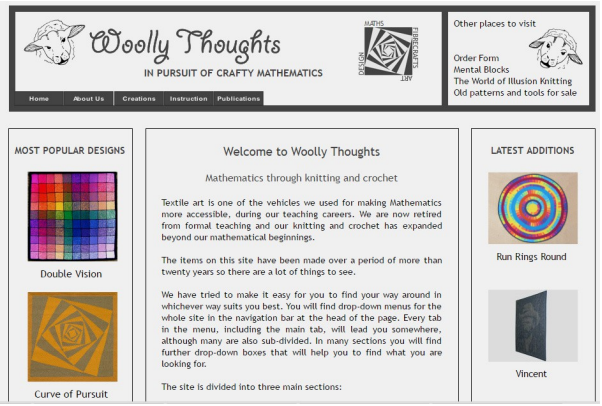
(Get out of the box: build bridges to other disciplines & non-disciplines)

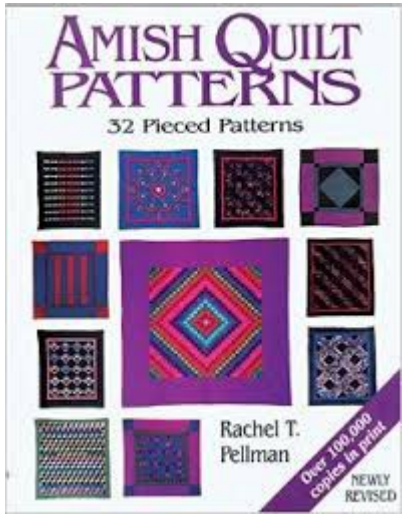
- "**<u>Maths and X</u>**": *x* member of {{accounting, *acupuncture*, archaeology, *art*, …. youth development, *zoology*, zymology, …}}

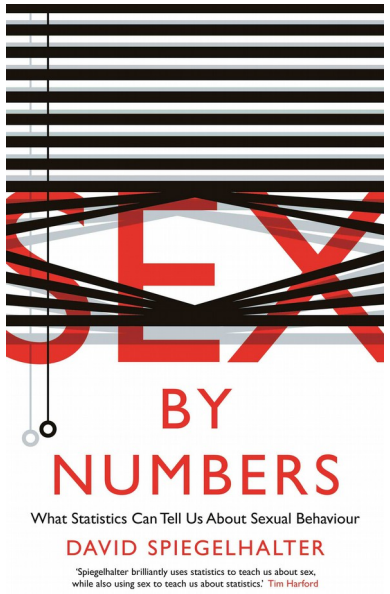
- **<u>Hobbies & everyday activities</u>** too: (archery, *beer*, chess, *drama*, …gardening, … *knitting*, … quilts, … *sport*, … war, *xylophones*, youth, *zebras*)

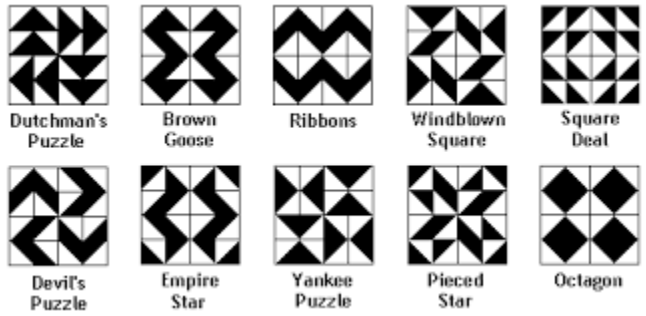
- **<u>Health & Risk</u>**

- **<u>Joint activities</u>** e.g. suitable for both numeracy *and* literacy curriculums

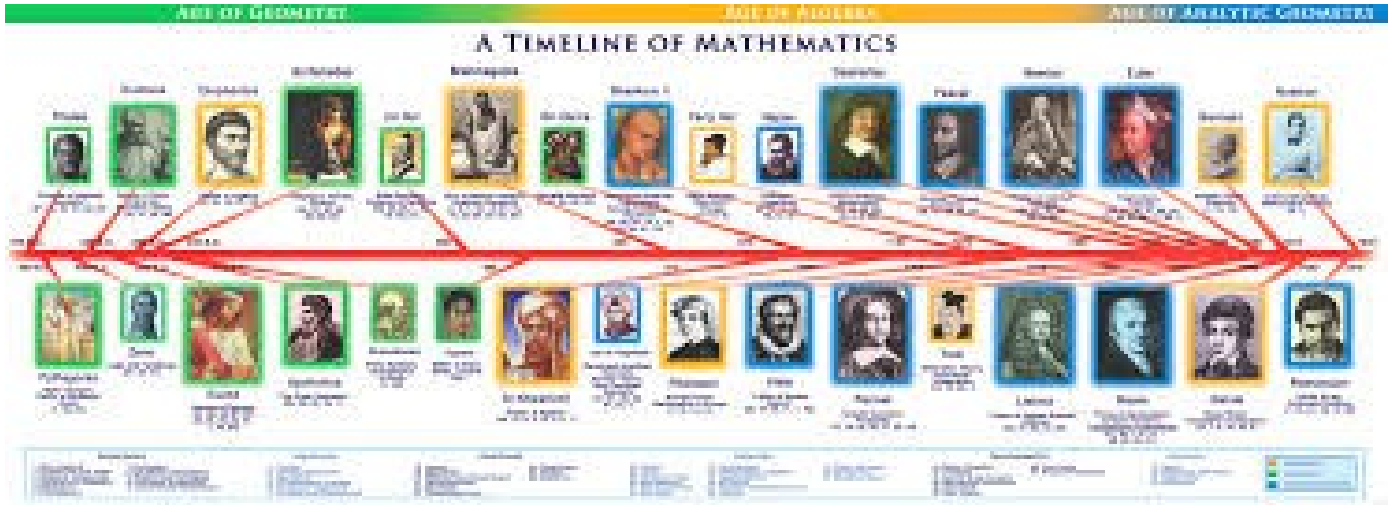








Maths timeline



BRITISH SOCIETY
FOR THE HISTORY
OF MATHEMATICS

My personal timeline:

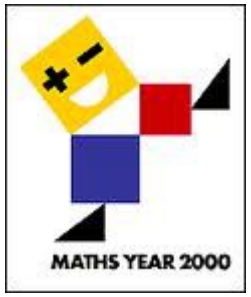
1970s Open University

1989 **PopMaths RoadShow**

YMTG

1995 **Maths FunFairs**

(York Maths Teaching Group)



1999-2001 **Maths Year 2000** (WMY2000)

. . . . .

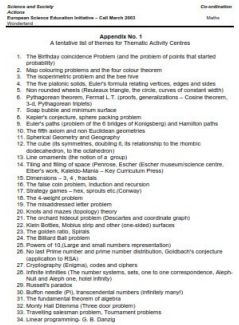
1987 **QED**

1993 **FunMaths!**

1998 **MatheMagic**

Maths in a Van

York Maths & Science 'Buses'



2003 **EUmath** (Math. Wonderland)

2014 **MATRIX (Dresden)**

. . . . .

2001-2003 **Count On!**

2009 **Maths World UK**

MATHSWORLDUK

2016 **MATRIX (Leeds)**

MAT
RIX

World Maths Year

2020 ???

Forward to 2020!

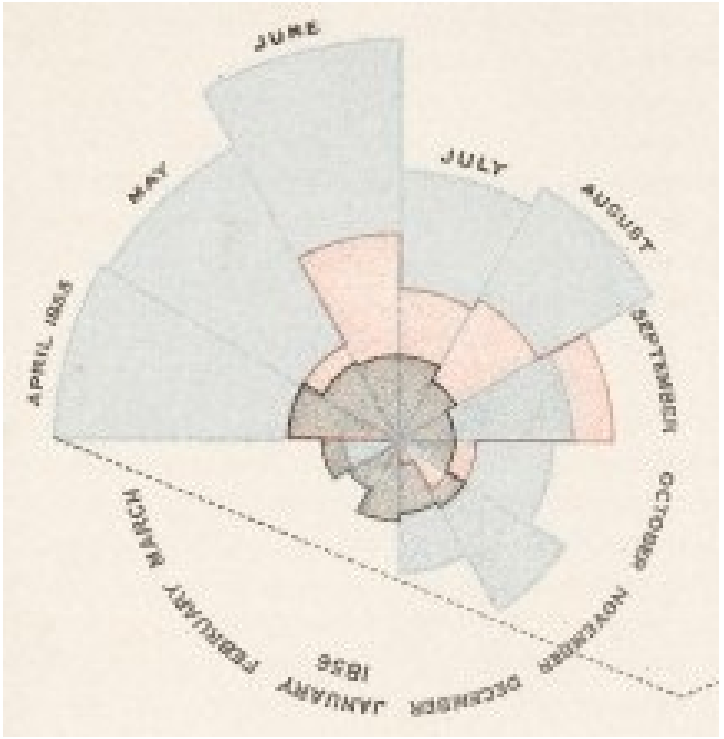
Can *World Maths Year*
build on some of these ideas?

M^2X^2

4 x 5 x 101

An ideal icon for 2020?

Florence Nightingale
(1820-1910)



<u>Amy Johnson</u> – a better icon?

- **Less remote for today's target groups – in time and in social class**
- **More "mathematical" (engineer/navigation)**
- **A better role-model? (Hull swimming baths – she stood up for 'women's rights' against her headmaster who called swimming 'unladylike')**

Gender equity or
Social class equity?

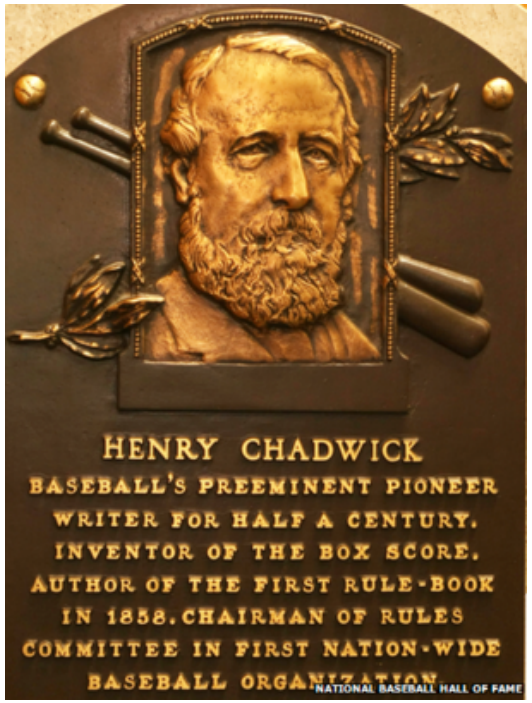
- **Beat the drum!**
- **Beat the bigger drum !!!**

William Farr - part of the “bigger drum” !

- Son of an agricultural labour
- Contrast to Nightingale who was massively privileged
- A greater statistician than Nightingale –
  and far more than her “statistical assistant”
- He probably saved more lives too – via public health

William Farr
(1807-1883)

Edwin Chadwick 1800-1890



Henry Chadwick
1824-1908
“Father of baseball statistics”

WMY2020 legacy - this is important!

- Ideas from Radical Statistics, Full Fact, and MWUK

MathsWorldUK + Radical Statistics = MathsData World …. ???

RADICALSTATISTICS

MATHSWORLDUK

MathsData World

National network of local "Discovery Centres" (with outreach):

1. **Hands-on data exploratory/museum:** 'edutainment' from the worlds of science, technology, mathematics, art, music, colour, fun, history, philosophy, politics etc., etc. – all relating to data and information

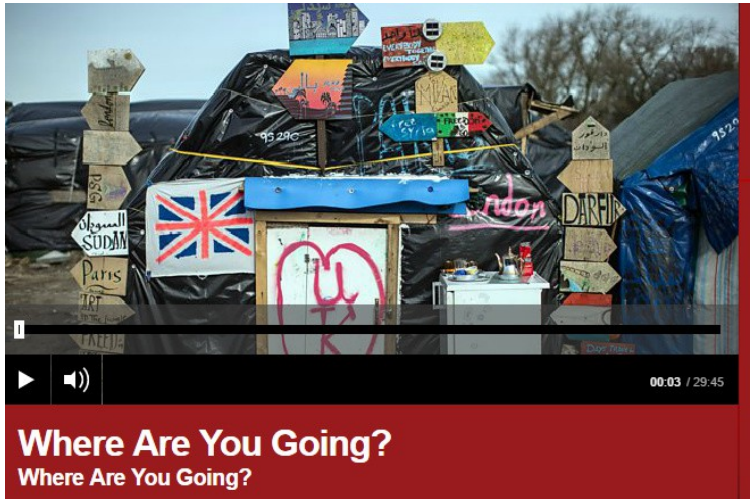
2. **Social venue and meeting-place** for events with a science or technology flavour

3. **Community resource centre** for local community groups and others who use data in their activities.

Lastly – on BBC World Service yesterday:
From ‘The Jungle’ migrant camp in Calais

Young maths teacher: “I want to go to UK so I can teach mathematics. It’s what I do. It’s beautiful.”

An impossible dream?



Catherine Carr: “*Where are you going?*” BBC World Service

Do we have a critical mass here at MATRIX

along with partners

to turn an “impossible dream”

into WMY 2020 ??

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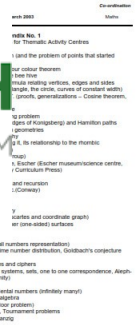

mathematikum
Mathematik zum Anfassen.

MATHS YEAR 2000

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