Artificial Intelligence forces us to change Maths education

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The Importance of Math

Brazil 2017

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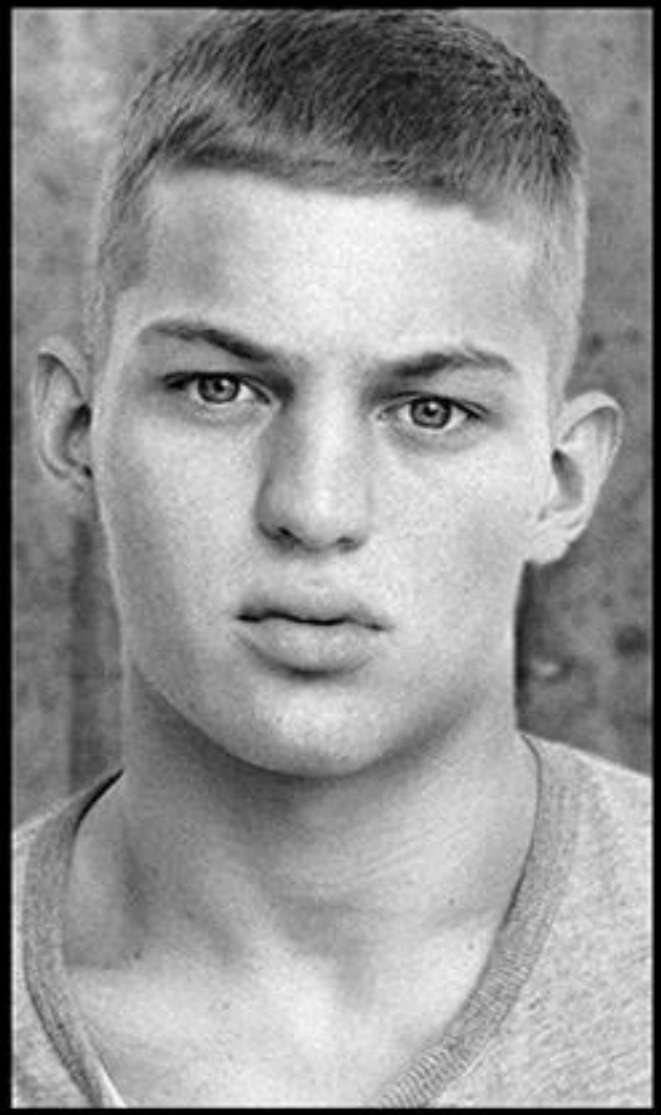
Car assembly line

Learning in lines - 1950’s

Learning in lines - 2010

Boring

Meaningless



Frightening

$$\sqrt{25} - 2^3$$

$$a^4 \cdot a^4 \cdot (-a)^2$$

$$X^2 - 16 = 0$$

$$4x - 9 = 21 - x$$

$$9(x+3) = 63$$

$$-x^5 - 3x^4 + 4x^3 = 0$$

Teaching Math has not changed in 100 years!

OECD: Ten Questions for Mathematics Teachers...and how PISA can help answer them

Machine is solving school Maths

Step by step

Algebra

Mathway

Graph the parabola using the direction, vertex, focus, and axis of symmetry.

Direction: Opens Up

Vertex: $(1, 3)$

Focus: $\left(1, \frac{13}{4}\right)$

Axis of Symmetry: $x = 1$

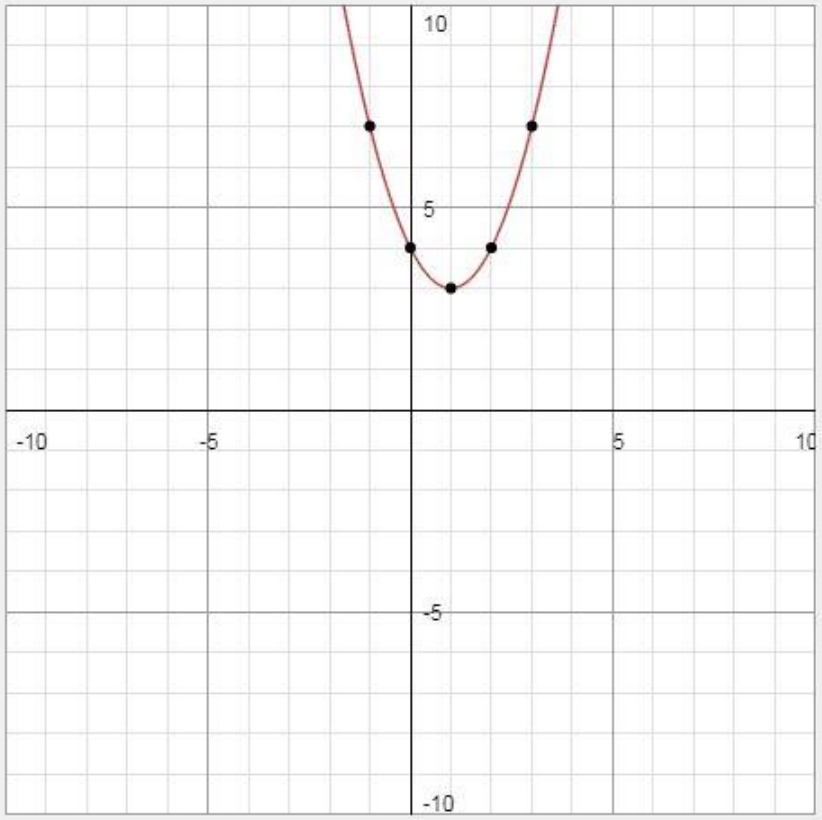
Directrix: $y = \frac{11}{4}$

x	y
-1	7
0	4
1	3
2	4
3	7

Tap to view steps...

Enter a problem

Tap to view steps...



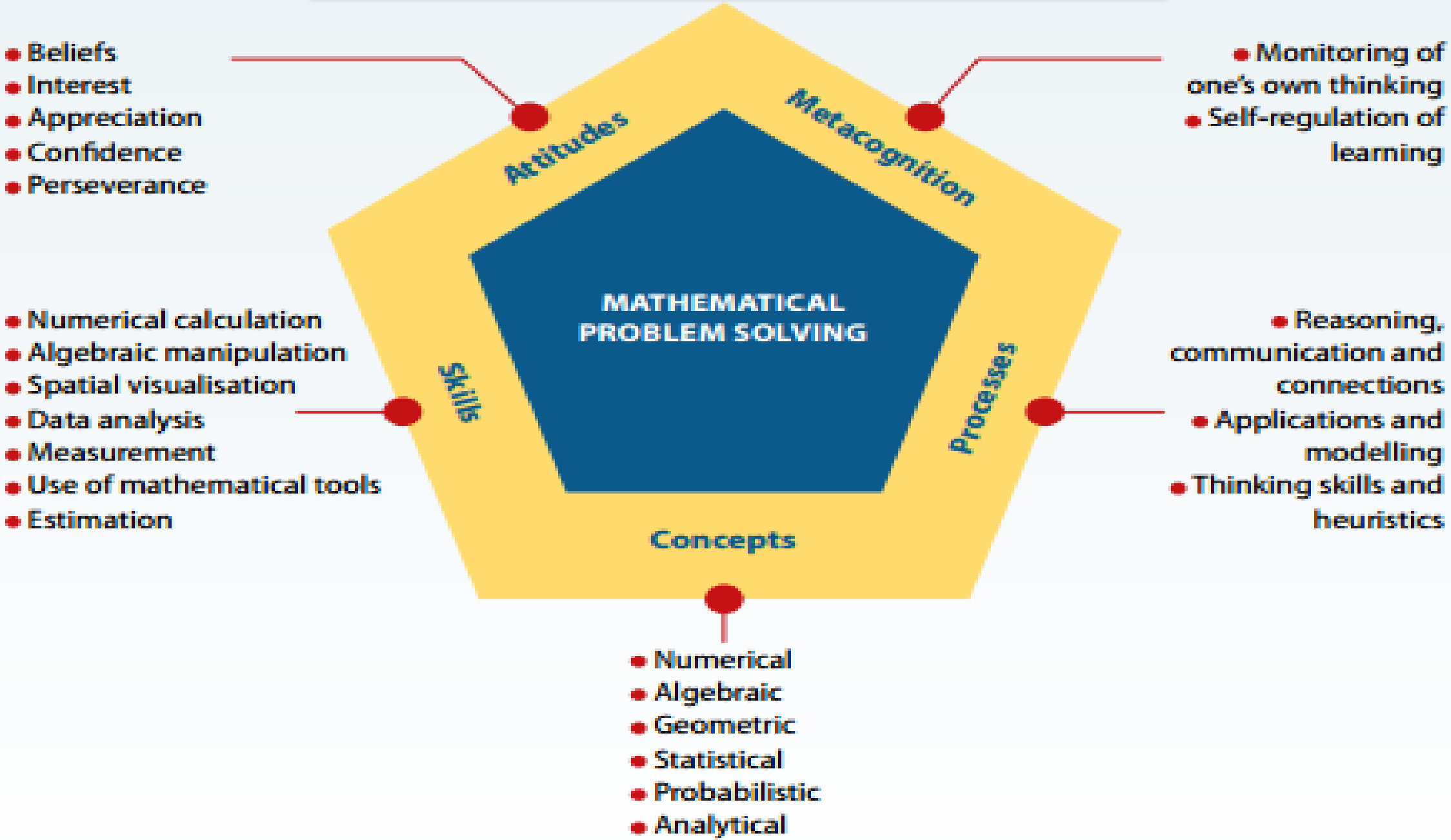
Enter a problem

10 Skills you'll need in the workplace by 2020

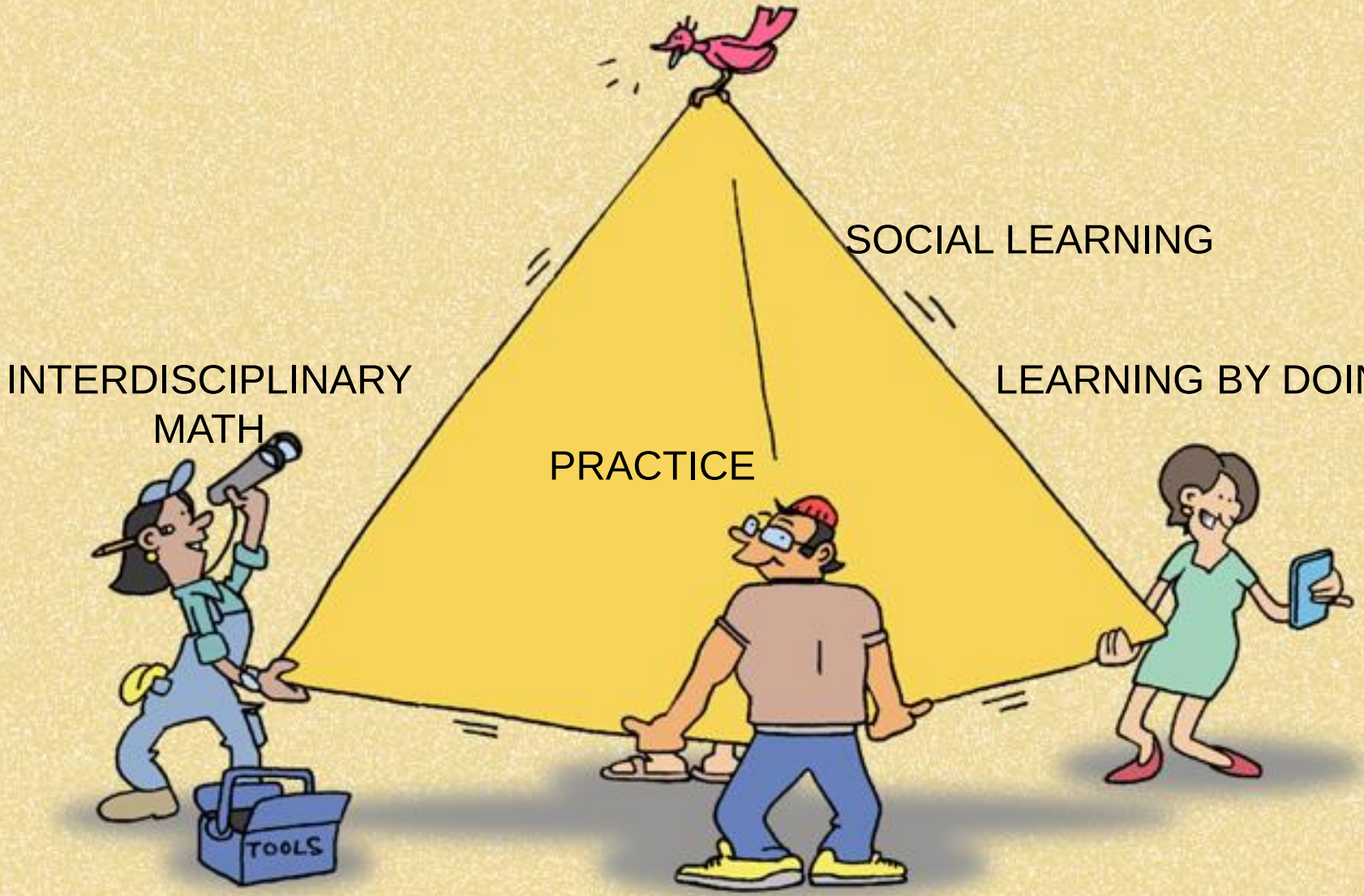
WORLD ECONOMIC FORUM

- 10 Cognitive flexibility
- 9 Negotiation
- 8 Service orientation
- 7 Judgement & decision making
- 6 Emotional intelligence
- 5 Coordinating with others
- 4 People management
- 3 Creativity
- 2 Critical thinking
- 1 Complex problem solving

Modern curriculum of Mathematics



OUR FOUR PILLARS



Real-life problems


tomaatti
tomat
1.lk Puola
1 69
kg
29
Kukkakaali
blomkål
1.lk Suomi
Chiquita
SÄÄSTÄ
1 49
2 19
1 50
1 99
2 49


Rasvaton
maitojuoma

Real-life problems

Double lessons!
Re-arrange the classroom

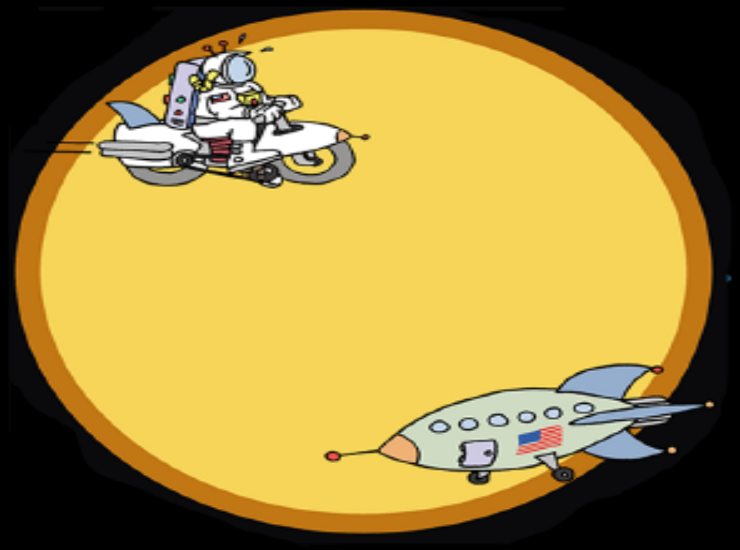
paths to math


Planning strategy together

Modelling

6. OUR SOLAR SYSTEM

Place the planets on the blue line with correct distance to the Sun.
Use pinch zoom to change scale.



Planet	Average distance from the Sun (km)
Mercury	58,000,000
Venus	108,000,000
Earth	150,000,000
Mars	228,000,000
Jupiter	778,000,000
Saturn	1,430,00,000
Uranus	2,870,000,000
Neptune	4,500,000,00

Modelling

Estimating and using creativity

Measuring and rounding

Physical exercise makes brain work better:
Improve your concentration, mental health
Enhance your creativity
Boost your memory
Don’t sit still

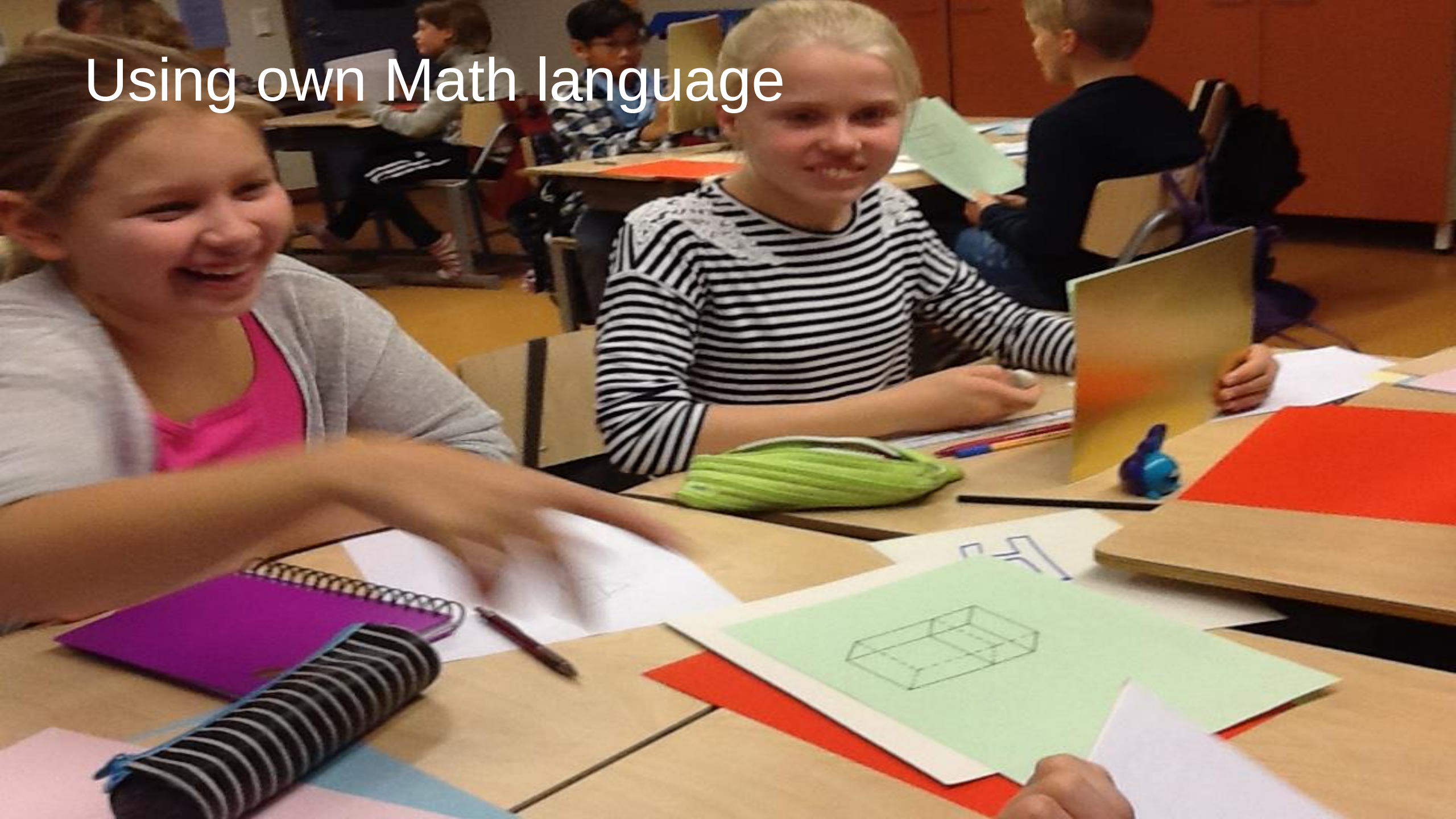
paths to math

https://www.theguardian.com/education/2016/jun/18/how-physical-exercise-makes-your-brain-work-better

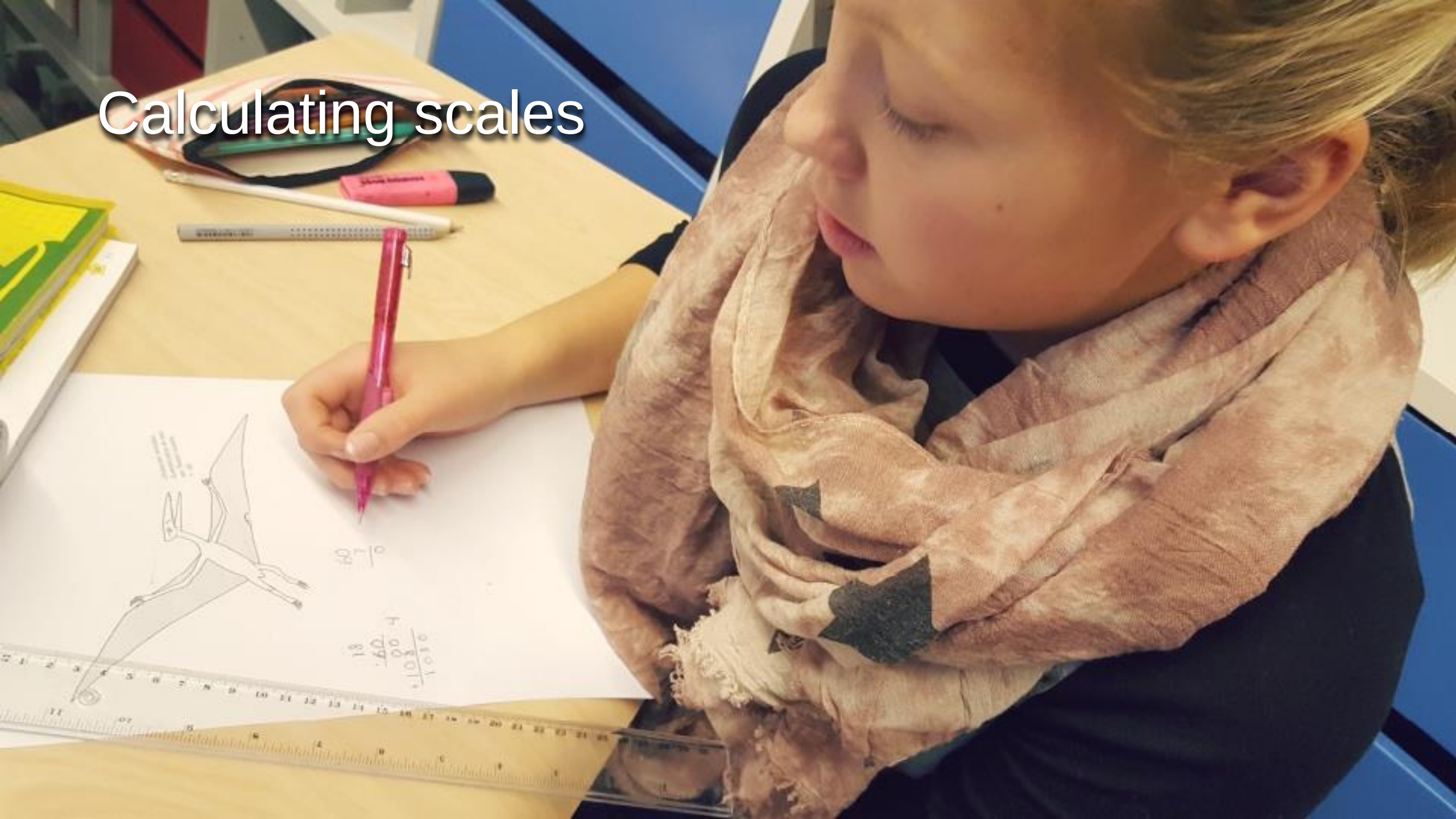
Classifying


A
C
E
G
I
K
B
D
F
H
J

Using own Math language



Calculating scales



From teacher - directed to student -centered Versatile teaching methods

paths to math


Fascinating

Meaningful and interesting

Fun!

Successful pedagogy is about balance

paths to math


• Online teacher training
• Workshops
• Intensive Training Program
paths to math

"Mathematics is a powerful tool that helps us make sense of the world."

MAARIT ROSSI / FINLAND

TOP 10 FINALIST

#TeachersMatter

GLOBAL TEACHER PRIZE
VARKEY FOUNDATION

Thank you.

Maarit Rossi

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