

IBO REGIONAL CONFERENCE
ROME, 17 OCTOBER 2014



IB AFRICA, EUROPE & MIDDLE EAST
REGIONAL CONFERENCE 2014
ROME • 16–19 OCTOBER

GIOCARE IN CUCINA CON LA MATEMATICA IN YEAR 1



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THE MATHEMATICIAN'S GLASSES



GLI OCCHIALI
DEL MATEMATICO



**WELCOME TO THE
MATH WORLD!**

**"THE YEAR OF FOOD:
MATHEMATICAL
THINKING THROUGH
MEANINGFUL
CONTEXTS"**



WHAT DOES MATH LEARNING LOOK LIKE TO YOU?

I used to think...



WHY ARE WE HERE? WHAT ARE WE GOING TO DO?

- **TEACHING COMPLEX MATHEMATICAL CONCEPTS IN YEAR 1**
 - How children learn through **HANDS-ON** mathematics
 - How we develop an understanding of mathematics through **ENGAGEMENT** and **CURIOSITY**
 - How children **MATHEMATIZE THEIR WORLD** – the math children can see every day in their lives
 - How we can **REMOVE THE MYSTERY** and eliminate “mathphobia”
 - The **PROTAGONISTS OF MATHEMATICS**



UNDERSTAND BY DOING

HANDS-ON LEARNING



“Azione interiorizzata”

J.J. PIAGET



“Conoscere con le mani”

M. MONTESSORI



LET'S COOK SOME SOUP!



WHAT DO WE NEED?

- YOUR INGREDIENTS



Three little pieces of paper

- YOUR MENU



A post- it

- YOUR POT



Your desk



CHOOSE 3 INGREDIENTS:

0

7

4

2

8

3

9

1

6

5

PRONTI?



CUOCHI...

VIA!





IMPIATTARE!



HOW MANY DIFFERENT KINDS OF SOUP DID YOU MAKE ?

- 3?
- 4?
- 6?
- 8?





**WHAT ARE THEY
TRYING TO UNDERSTAND?**

**WHAT CONCEPTS
ARE THEY INVESTIGATING ON
THEIR OWN?**



WHAT DID THE KIDS DO?



TALK WITH A PARTNER

**WHAT ARE THEY
TRYING TO UNDERSTAND?**

**WHAT CONCEPTS
ARE THEY INVESTIGATING
ON THEIR OWN?**





NUMBERS

724

98

572

37

123

941

NUMERALS

0

3

8

9

7

5

1

2

6

4

n!

$$n! = 1 \times 2 \times 3 \times \dots \times n$$

$$n! := \prod_{k=1}^n k = 1 \cdot 2 \cdot 3 \cdots (n-1) \cdot n$$



OUR APPROACH TO MATH LEARNING

- Complex concepts
- Concrete experiences
- Authentic experiences



THE QUEEN OF SCIENCES

G. Leopardi

F.W.A. Frobel

Tutto è numero
Pitagora

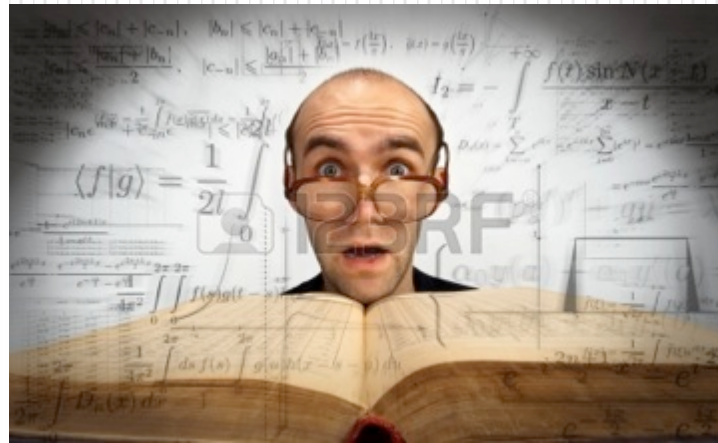
Galileo Galilei

Camillo Benso
conte di Cavour



TAKING THE MYSTERY OUT OF MATH

MATH IS MADE OF
REPETITIVE
AND
MONOTONOUS
EXERCISES
CALLED
PROBLEMS.



MATH IS
SOMETHING
BORING
TO REPEAT
INTO
INFINITY.

MATH IS
SOMETHING THAT
SCARES PEOPLE!

IL FASCINO È SPARITO
PER LASCIARE
POSTO ALLO
SPAVENTO



HOW WILL THIS WORK ENGAGE STUDENTS' CURIOSITY?

IS THE STUDENT A CO-LEARNER?



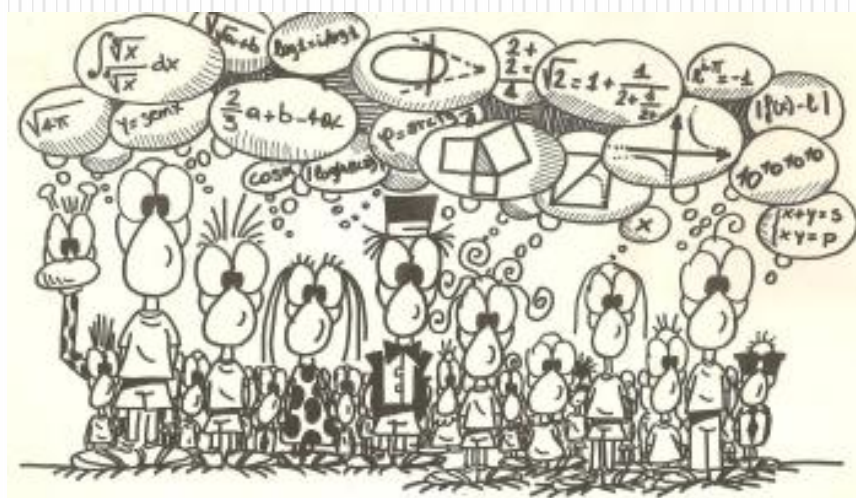
IS THE MATH EXPERIENCE RELEVANT TO THEIR EVERY-DAY LIFE?



WHO ARE THE MATH MAKERS AT SCHOOL?

I PROTAGONISTI DEL FARE MATEMATICA

HOW ARE THEY CONNECTED?





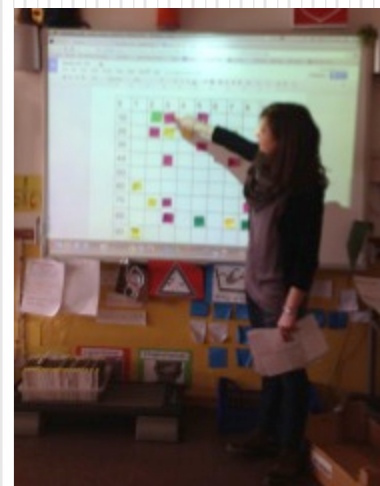
IL TRIANGOLO DELLA DIDATTICA



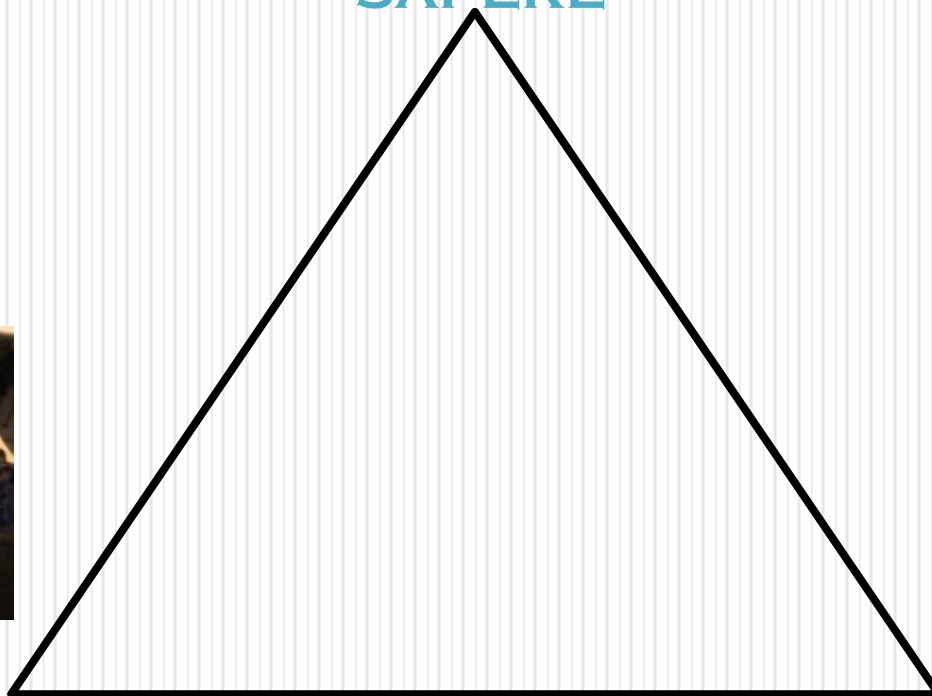
SAPERE



ALUNNO E
IL SUO SAPERE



INSEGNANTE E IL
SUO SAPERE

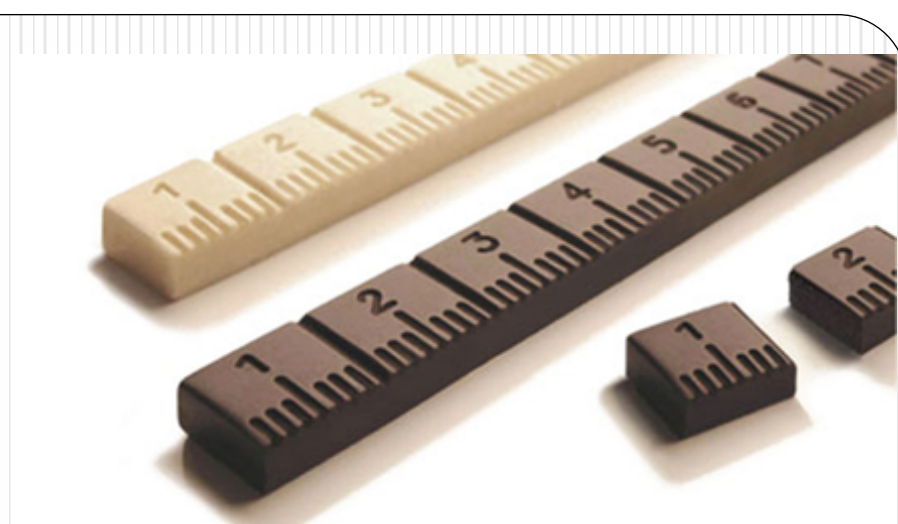


MATH WORLD

RESTAURANTS



**CAN YOU IMAGINE
WHAT A “MATH
RESTAURANT”
WOULD LOOK
LIKE?**



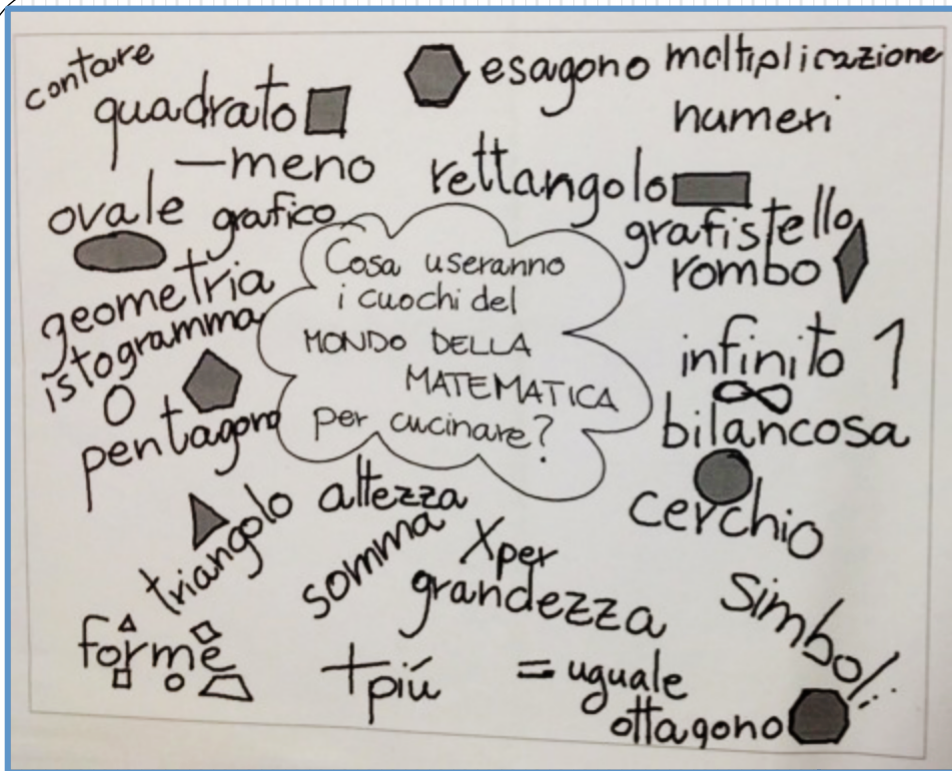
**WHAT WOULD
“MATH CHEFS”
CREATE?**



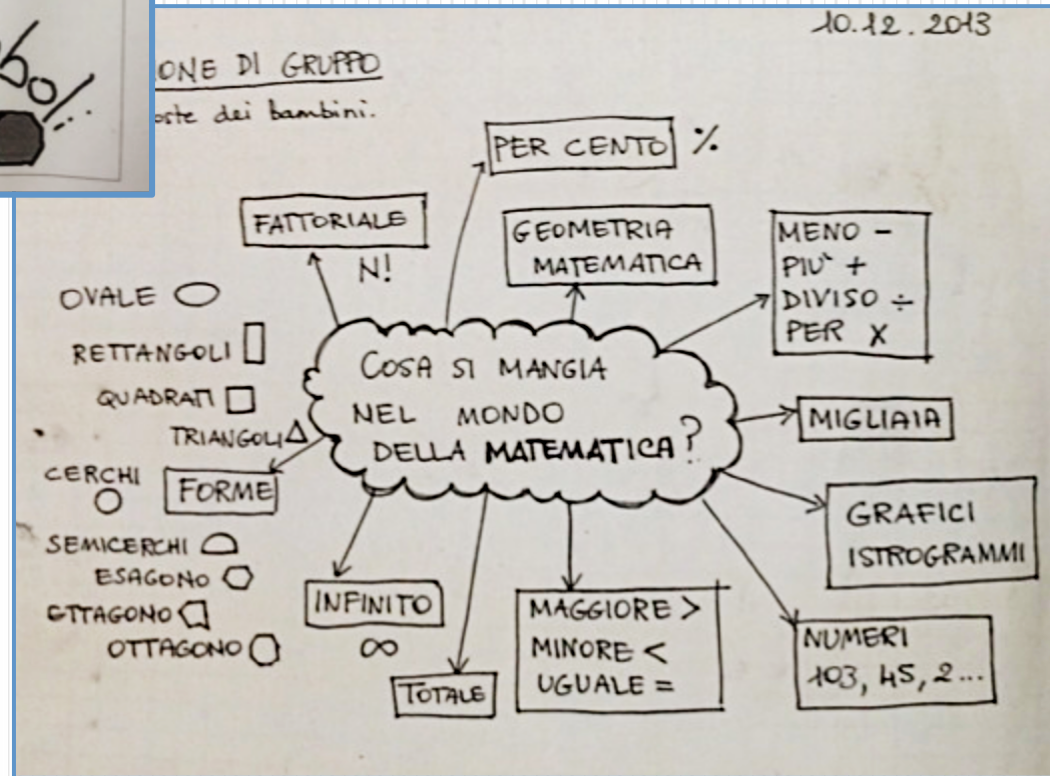


**WHICH
INGREDIENTS
COULD WE USE
IN A “MATH
RESTAURANT”?**

HOW MANY MATH CONCEPTS...



...DOES A 6 YEAR-OLD CHILD HAVE IN HIS/HER MIND?





Ristorante

Cuochi



.....
.....
.....

MENU

ANTIPASTI

.....€
.....€
.....€

PRIMI

.....€
.....€
.....€

SECONDI

.....€
.....€
.....€

DESSERT

.....€
.....€
.....€

WRITE A MENU

INVENT PRICES



IN THE SAME MOMENT THEY WERE:



Mathematicians

Chefs

Writers

Customers

Readers

Waiters

Cashiers





HOW WERE THEY...

Ristorante

.....
Via Quadrata 30, 18273

Mondo della Matematica

..... €.....

..... €.....

..... €.....

..... €.....

Ristorante

.....
Via Tonda 59, 18273

Mondo della Matematica

..... €.....

..... €.....

..... €.....

..... €.....

N. articoli.....

TOTALE €.....

Grazie e arrivederci!

Ristorante

.....
Via Retta 11, 18273

Mondo della Matematica

..... €.....

..... €.....

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..... €.....

N. articoli.....

TOTALE €.....

Grazie e arrivederci!

Ristorante

.....
Via Rettangolare 91, 18273

Mondo della Matematica

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N. articoli.....

TOTALE €.....

Grazie e arrivederci!

.....

.....

.....
arrivederci!

CASHIERS?





MATH

Numbers

Addition

Subtraction

Tens and units

Waiters

Writers

Cashiers

Chefs

Mathematicians

HEALTH EDUCATION

Attitudes about food

Readers

Customers

ART

Creative menu

LANGUAGE

Spontaneous writing

Reading

Oral Speaking

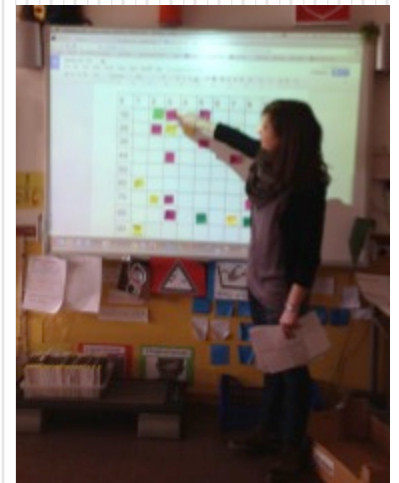
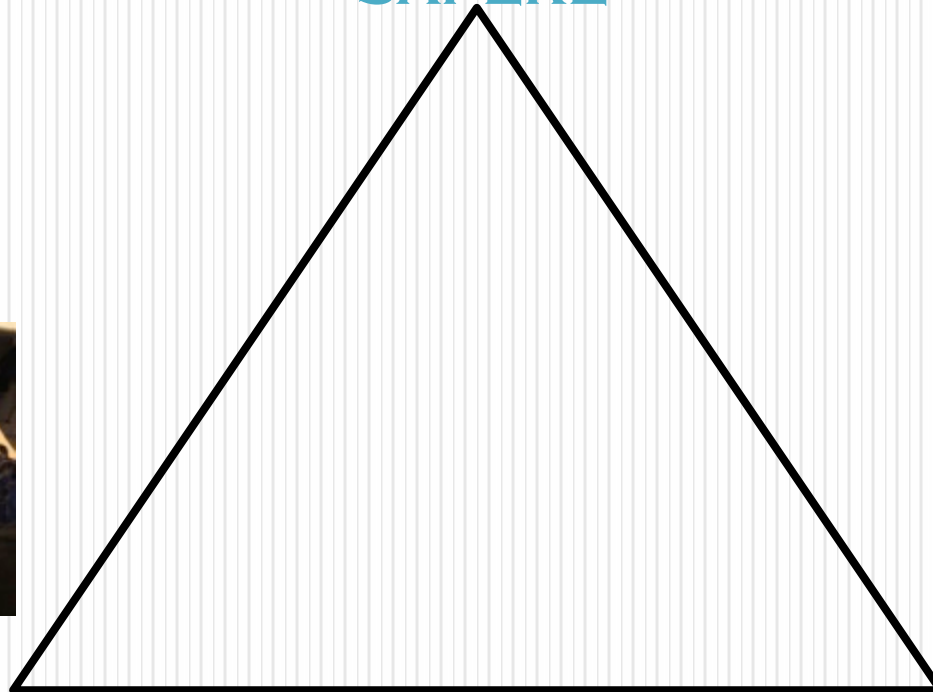
IL TRIANGOLO DELLA DIDATTICA



SAPERE



ALUNNO E
IL SUO SAPERE



INSEGNANTE E IL
SUO SAPERE

WHAT DOES MATH LEARNING LOOK LIKE TO YOU?

Now I think...



**THANK YOU
SO MUCH!
GRAZIE MILLE!**

